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C-17 AIRLIFTER PROGRAM

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HEARINGS

BEFORE THE

LEGISLATION AND NATIONAL SECURITY SUBCOMMITTEE

OF THE

COMMITTEE ON GOVERNMENT OPERATIONS HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRD CONGRESS

FIRST SESSION

MARCH 17, 18, AND APRIL 22, 1993

Printed for the use of the Committee on Government Operations

SUPERINTENDENT OF DOCUMENTS

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C–17 AIRLIFTER PROGRAM

WEDNESDAY, MARCH 17, 1993

HOUSE OF REPRESENTATIVES,
LEGISLATION AND NATIONAL SECURITY SUBCOMMITTEE
OF THE COMMITTEE ON GOVERNMENT OPERATIONS,
Washington, DC.

The subcommittee met, pursuant to notice, at 10 a.m., in room 2154, Rayburn House Office Building, Hon. John Conyers, Jr. (chairman of the subcommittee) presiding.

Members present: Representatives John Conyers, Jr., Glenn English, Carolyn B. Maloney, Corrine Brown, Al McCandless, William F. Clinger, Jr., and Dick Zimmer.

Also present: Representative Stephen Horn.

Subcommittee staff present: Robert J. Kurz, acting staff director; James C. Turner, associate counsel; Eric Thorson, professional staff member; Cheryl G. Matcho, clerk; and Monty Tripp, minority professional staff.

Full committee staff present: Julian Epstein, staff director, and Matthew R. Fletcher, minority staff director.

OPENING STATEMENT OF CHAIRMAN CONYERS

Mr. CONYERS. The committee will come to order.

The Legislation and National Security Subcommittee continues oversight hearings on the C–17.

The Chair recognizes Mr. McCandless, the ranking minority member.

Mr. MCCANDLESS. Thank you, Mr. Chairman.

First I want to commend you for the work you have done in the past 2 years in bringing the problems of the C–17 to light. It is no secret I am an advocate of a strong national defense.

As a former Marine, I am a proponent of maintaining our ready forces, and defend the importance of sustaining our logistic capability. At the same time, however, I am well-known as a deficit hawk, and I share the concerns expressed by both Chairman Conyers and the bipartisan membership of the House Armed Services Committee on the C–17.

Today, every weapons and support system must justify its cost, and we in Congress must be given the information necessary to make the hard spending decisions confronting our Nation. We have to know where a program stands, its strengths, weaknesses, and it's potential long-term costs to make informed choices.

Based on the evidence provided to date, it appears that Congress has not been given the information necessary to make these hard choices on the C–17.

I commend you, Mr. Chairman, for the perseverance that you have demonstrated in bringing the problem to light.

Thank you.

Mr. CONYERS. I thank the gentleman.

The Chair recognizes the gentleman from Pennsylvania, and ranking member of the full committee, Mr. Clinger.

Mr. CLINGER. Thank you very much, Mr. Chairman.

I want to join in commending you for your perseverance as well as your long and difficult work on this very important issue.

It is true that the C–17 has a major role in our Nation's future airlift capability. That cannot be downplayed. Neither, however, can the role of Congress in protecting our national interest.

The Department of Defense inspector general has issued a report alleging an Air Force coverup of the problems surrounding the C–17. He has stated that high-ranking Air Force officials deliberately misled both the Under Secretary of Defense and the Congress on major problems affecting the aircraft.

Based on the testimony to be presented, it appears that these misdealings were not isolated events, but were instead part of a deliberate and ongoing attempt to stymie departmental and congressional oversight of the C–17. I find that troubling, and I know you do, to say the least.

Just as troubling has been this administration's handling of those allegations and the lack of response to these hearings. Our staff first contacted the Department of Defense to discuss the inspector general report in mid January. For the first 5 weeks our calls went unanswered. Since that time, we have been put off time and time again with the explanation that no one has authority to speak on behalf of the C–17.

Mr. Chairman, I understand the Department of Defense is undermanned right now. It appears that Secretary Aspin is running a one-man show, and I don't envy him. He has now had to go into the hospital again. Nevertheless, I cannot understand why this is the case.

President Clinton learned of his new job on November 8. He has since had 4 months to assemble a team and assert control over the Department of Defense. Yet, he has failed to do so. Failure has resulted in the Department's inability to meet its challenges and unfairly handicapped the Pentagon's efforts to respond to the problems of the day, this being certainly a central problem of the day.

Congressional requests for information go unanswered as programs in need of oversight go unassessed. That situation cannot long continue without this administration's DOD becoming ripe for its own national performance review.

So, Mr. Chairman, I look forward to today's testimony, and again commend you for calling these series of hearings.

Mr. CONYERS. Thank you, Mr. Clinger.

The Chair recognizes the gentlelady from New York, Mrs. Maloney.

Mrs. MALONEY. Thank you, Mr. Chairman. And likewise, I commend you on your research on this issue.

I think it is appropriate that on the day when we all celebrate St. Patrick's driving the snakes out of Ireland, we begin our yearly quest to drive corruption and waste out of Government. Today's

hearing goes directly to the heart of the public's anger over public spending.

Why did we pay $95 million 3 years ago for a C–5B cargo plane, and today pay $400 million for a C–17 cargo plane, basically the same plane with some modifications, with broken wings?

Why, the public asks, is this program 2 years late and over $1 billion over budget? And these questions do not even address the damning evidence of illegal payments of hundreds of millions of dollars to this contractor. We need to find out how this happened.

I think the committee must consider whether the problem we hear today is an isolated incident or a systemic problem in Government. And if it is systemic, then we on the committee should look at legislation to correct it.

Thank you, Mr. Chairman.

Mr. CONYERS. I thank the gentlelady from New York.

We have got a videotape that depicts a problem with the wings of the static test airplane on October 1, 1992. The wings broke at 128 percent of the max load factor. I understand the military design specifications require that the wings withstand 150 percent.

I think the videotape will be an appropriate beginning before we start with the inspector general.

[Presentation of videotape.]

Mr. CONYERS. Our first witness is deputy inspector general Derek Vander Schaaf, accompanied by Robert Lieberman, Russell Rau, and Kenneth Stavenjord.

Will you all please stand?

[Witnesses sworn.]

Mr. CONYERS. Thank you very much.

Let the record indicate that all of the witnesses have stated in the affirmative.

We have your prepared statement, Mr. Vander Schaaf. It will be incorporated in the record, without objection, as will all the witnesses' statements, and all the opening statements of members of the committee. We invite you to proceed in your own way.

STATEMENT OF DEREK VANDER SCHAAF, DEPUTY INSPECTOR GENERAL, DEPARTMENT OF DEFENSE, ACCOMPANIED BY ROBERT J. LIEBERMAN, ASSISTANT INSPECTOR GENERAL FOR AUDITING; RUSSELL A. RAU, PROGRAM DIRECTOR, SYSTEMS ACQUISITION DIVISION; AND KENNETH STAVENJORD, TECHNICAL DIRECTOR, TECHNICAL ASSESSMENT DIVISION

Mr. VANDER SCHAAF. Let's maybe try this with you in terms of proceeding with the hearing, Mr. Chairman: Let me discuss the testing of the aircraft and the riveting issue with the static testing, and then let's go on to the financial situation that occurred during the latter half of 1990, if that is all right with you.

I have with me here today on my left Mr. Robert Lieberman, who is the assistant inspector general for audit in our organization. To his left is Mr. Ken Stavenjord, who handles our Technical Assessment Division. To my right is Mr. Russell Rau, who did the audit work related to the C–17 and its financial issues.

I am going to discuss four of our completed reports, and then one future report that we are working toward. The first completed report deals with the mechanical fastener quality acceptance issue,

i.e. the so-called riveting matter. Two of the others deal with financial accounting practices involving the C–17. And the fourth is the one we will focus on most today, financial practices involved in the situation that occurred in the latter half of 1990.

I also will bring this wing structural integrity question into my testimony.

We evaluated the riveting and the quality assurance program for the riveting of the C–17 aircraft wings. We found that the rivets in the C–17 aircraft wings met the acceptable lower limits for rivet expansion. However, the amount of rivet expansion actually in C–17 lower-wing skins was greater than any experimentally justified range presented.

The Government failed to ensure that the contractor set upper limits for acceptable rivet expansion in lower C–17 wing skins, based rivet expansion limits on a complete set of tests, or tested for damage tolerance with the amount of expansion actually happening in C–17 wings.

The Government is not protected from the possible adverse effects of the amount of rivet expansion actually in C–17 wings by either the planned durability tests or the C–17 contract warranty.

The fuel leaks in flight test aircraft T–1 were not caused by inadequate riveting, as speculated by some observers at that time. However, two-piece fasteners were improperly installed in the C–17 wings and caused some of the leaks.

The Government did not ensure that Douglas Aircraft Co. assigned inspection of two-piece fasteners to quality assurance personnel at the fabrication level, the lowest level where they put aircraft components together.

The quality assurance program for the C–17 wing mechanical fasteners was not in compliance with military specifications. Procedures were not followed, and in some cases were confusing or nonexistent. As a result, fastener quality was inconsistent and quality assurance data were missing or incomplete.

Our concerns that the deficiencies we identified are systemic were confirmed by a special program performance review conducted by the defense contract management command in response to our draft report.

We recommended that the contractor not be allowed to have exceptions to prescribed rivet expansion limits; that rivet expansion limits be based on complete testing; and that Douglas process standards be revised to state the acceptance requirements for rivet samples clearly and completely.

For two-piece fasteners, we recommended that quality assurance personnel be assigned to inspect those fasteners at the fabrication level.

We also recommended the previously mentioned review of the entire quality assurance program for the C–17 aircraft, to determine whether deficiencies identified in our report are systemic.

The Air Force responded that additional tests were unnecessary and would create needless costs. We asked the Air Force to reevaluate its response in view of the incompleteness of the tests done so far.

The Air Force stated that the current warranty provides for defect correction. We asked the Air Force to reevaluate its position

since the potential effects from the amount of expansion actually in C–17 wings would not appear during the current warranty period. In other words, you can have over expanded rivets, but the problems are not likely to occur during the period of time that these aircraft are under full warranty.

The Air Force also stated that additional study is not necessary because it already had a substantial body of knowledge and experience to support its position on fatigue from the amount of rivet expansion in the C–17 wings. We requested that the Air Force either reevaluate its response or come forward with the theoretical information to substantiate its position. We have been asking to see such information for months.

Let me stop here and tell you a little thing I found out just in the last few days. I said to our technical people, "Why are we having so much trouble convincing the Air Force that they ought to run some tests, run some coupons and attach 7,050 aluminum to 2,024 aluminum with the particular rivet that is used in this application?" That rivet is referred to as a 7050–TK73 or KE aluminum slug.

"How much is this going to cost? Why can't we do this and how much time is this going to take?"

The answer I get back—and we have made contact with a firm in Seattle, WA, and some other firms is from $10,000 to $20,000 to do these tests. Sir, that is peanuts when we are talking about a $350 million per aircraft program here.

And the individual came back and said they could do the tension-to-tension fatigue tests and the stress corrosion tests. For the stress corrosion tests, he stated a minimum of three specimens should be tested, and it would take a total of 3 weeks to conduct the test and 20 more days to complete the report.

Had they done the tests in September, they would have long been over and we could have known the answer to this question, at least we would have had a much better fix on this problem than we have today.

And the estimated setup costs for that particular test were $1,200, and they wanted $200 to test each of three specimens. For the tension-to-tension fatigue tests, the setup costs would be $300, testing would be $250 per specimen, and they would test up to 500 cycles of this particular specimen.

Anyway, I found this whole argument about cost and time just absolutely beyond my comprehension. Why didn't Air Force go ahead and put these metals together? They keep telling us they have data with respect to using this particular slug or rivet with these two particular metals, but we have been unable to find such information.

The Air Force and defense contract management command comments to the draft report were fully considered, but we made very few changes to that report. In general, we found the management comments to be nonresponsive. Much of the information that the Air Force initially said it had in its possession to prove conclusively there was no problem was not provided, or when eventually provided, did not support the Air Force position.

The key point is that the test reports presented to us since our review began do not include either stress corrosion tests with the

same materials and rivet expansion of the lower-wing panels, or fatigue tests with the amount of rivet expansion actually in the C–17 wings.

We do not know if comprehensive tests performed with the C–17 materials would indicate a significant, long-term durability risk. If such tests were to indicate minimal risk, we would withdraw our recommendations for more aggressive actions related to withholding funds or increasing warranties.

We strongly believe, however, that neither the Air Force nor the contractor have demonstrated that they know what the risk is.

So that is pretty much the situation on the rivets.

I want now to turn to page 23 of my statement. I want to finish up with the other testing issue while we are discussing testing issues in the C–17 program.

The other issue is the question of the wing structural integrity, and this relates to the videotape that you just showed. Remember, now, we are not talking about rivets causing that test failure—the rivets didn't cause those problems. There is some argument about that, but we don't believe the rivet problem was part of the problem you showed here. There are other problems in terms of structural design and so forth.

The wings failed at approximately 128 percent of the limit load for a severe test condition. The requirement was 150 percent. Both wings buckled rear to front, cordwise, with 25 to 50 percent skin fractures. Additionally, there were extensive structural failures in stringers, spars, and ribs.

On October 5, you asked us to examine the failure and the recommended solution to ensure the structural integrity of the aircraft. The Douglas Aircraft Co. formed two teams, a design test team and an independent review team, to analyze the failure and recommend corrective action. The Air Force program executive officer formed an executive review team to evaluate the completeness and adequacy of the failure investigations and corrective action plans.

The root-cause analysis identified three major contributors to this failure: A major design error, optimistic design assumptions, and test loads' placement.

We have reviewed the root-cause analysis with Douglas design engineers, Air Force engineers, the various review teams, and Air Force program management officials. We have found the analysis of the problem to be accurate and complete to date.

Now, that doesn't mean the problem is resolved. We know what the problem is. Now, the next step is, we have to find a way to fix the problem, and how to do that remains a very significant question here.

Now, we need to determine what is the proper way to do this and so forth. I don't know if you want to get into that at some point. Maybe I will wait and we will get into exactly——

Mr. CONYERS. Why don't we get into it now, if you can.

Mr. VANDER SCHAAF. OK. Let me try to get into that a little bit.

What we have now is that we are heading down a decision chain, I guess, to strengthen those wings and fix that static test vehicle you saw breaking up in the videotape. That fix is not going to be

the same as any fixes that are going to go on the wings for, say, the next 20 aircraft.

It is unclear how many will have to be strengthened. They have a design underway to do this by adding some stainless steel clips, but there are some concerns that they cannot be put in properly and will lead to long-term corrosion problems and so forth.

So there are probably going to be three kinds of wings on the C–17. First, you are going to have the static test vehicle wing that broke, and you are going to have to splice it across spars and ribs and do some changes there. Second, you are going to have another fix, if I can use that term, of an interim kind of repair or a patchwork kind of fix that you will make to whatever the number is, of spars and other pieces they have already procured. That is estimated to be from 20 to 30 sets of aircraft wings. Third, you'll have an engineering design change that will go into the remaining aircraft wings. It would probably be a beefup of the total wing and wouldn't be a patchwork approach to the problem.

We heard estimates of about $52 million to fix the first 11 sets of wings with the patchwork approach. No one knows for sure what government costs we are going to bear for those repairs or for the rest of the wings in the program. And, of course, there are some unanswered questions with respect to what this will do in terms of long-term durability also.

So that pretty much completes a quick overview of the issues. We are looking at this wing structure problem with the Air Force. We think they have it well in hand in terms of reviewing it. But there are some significant unknowns that still have to be addressed—they found out what the problems were. We believe that. But now the unknowns are, what is the correct fix?

I will go ahead now and proceed to the financial issues involving McDonnell Douglas that we received.

These financial problems involve improper appropriation fund accounting as well as the flow of money to the corporation during the latter half of 1990.

Our February 1992 report, entitled "Audit of Contractor Accounting Practice Changes for the C–17 Engineering Costs," stated that reallocation of engineering costs from development to production to overcome shortfalls in development funding were part of an overall plan in 1990 to provide additional financing to McDonnell Douglas.

In addition, our audit report on "Contracting Practices for the C–17 Flight Test Aircraft," dated April 10, 1992, stated that establishment, pricing, and Air Force acceptance of the completed assembly of the C–17 flight test aircraft—this was referred to as T–1—appeared to be part of that same bailout or financial plan.

You requested in January 1992 that we further review the concerted and planned efforts by the DOD to increase the cash-flow to McDonnell Douglas during late 1990. We conducted an extensive inquiry into the government actions concerning McDonnell Douglas Corp.'s financial condition in 1990.

We described how Air Force officials implemented a series of actions to provide financial assistance to McDonnell Douglas during August to December 1990 to ensure the contractor kept working on the C–17 program.

That is described in this 100 pages or thereabouts single-spaced report in great detail, and believe me, there are drawers full of documents behind this report. And most of our conclusions were based on the written documentary evidence.

We also did a lot of interviewing of witnesses and so forth to establish the facts with respect to this matter. Our findings therefore, are not dependent on one particular individual or the kind of statements we received from one individual.

The written documentation extensively supports the findings, and the comments and the testimony from individuals only help to corroborate the situation shown by the documentation.

Let me get back to the actions by the Air Force. These actions centered on meeting contractor cash-flow requirements without requiring the McDonnell Douglas Corp. to disclose the nature or extent of its financial difficulties, as required by acquisition regulations for advance or usual payments. Expedited government payments were made that exceeded what was justified, based on work performed, by $349 million.

Also, financing provided to the contractor exceeded the fair value of undelivered work by an additional $92 million, and that money should have been recouped; it was not timely recouped.

Improper contracting actions reduced contractor financial risk on the C–17 program by $1.6 billion and created a false appearance of success to facilitate the contractor obtaining——

Mr. CONYERS. Excuse me, Mr. Inspector General. We have a recorded vote. We will take care of it and we will come right back. Thank you very much.

Mr. VANDER SCHAAF. I will sit here peacefully waiting for you to come back.

[Recess taken.]

Mr. CONYERS. The subcommittee will come to order.

Mr. Vander Schaaf.

Mr. VANDER SCHAAF. All right, Mr. Chairman. When we left off, I was describing how certain actions were taken to give the false appearance of success during the fall of 1990.

This was at the same time that the Congress was debating the fiscal year 1991 acquisition program for the C–17 aircraft. And the issue before the Congress at that point, the way I remember it, was the difference between $300 million, which one committee had come forth with, and $1 billion, which another committee had come forth with.

So obviously if you look like you are showing success at this point in time, there is more of a tendency in Congress to be willing to go along with the program. I think that is a key issue also, a fact that has to be taken into consideration here.

Additionally, through Air Force approvals of improper cost allocations, procurement funds were used to continue to pay C–17 development costs after RDT&E funds were exhausted. The responsible Air Force officials considered their actions necessary for continuing work on the program because of the cash-flow difficulties being experienced by the contractor and contractor threats to stop work. However, those cash-flow difficulties were largely the result of problems with commercial rather than government contracts.

Those improper actions substantially increased government program risk, provided premature payments to the contractor, negatively impacted aircraft delivery and contractually obligated the government to award a subsequent lot 3 production contract.

Award of the lot 3 production contract was particularly important because it provided an additional source of funding to the contractor and a further false indication of the program's success. The actions also resulted in what we believe are violations of statute and acquisition regulations.

Statutory and regulatory regulations exist for providing financial assistance to contractors under certain conditions, including financial hardship. Those provisions were not applied, although their use was warranted by the circumstances. Rather, the Air Force officials chose to make improper concessions to the contractor contrary to the intent and direction of the Under Secretary of Defense for Acquisition.

Contract modifications were executed that were disadvantageous to the government. The C–17 System Program Director falsely described the contractor as meeting the production schedule in order to permit modification of the C–17 contract.

Subsequently, incomplete work was accepted. The Systems Program Director falsely described the condition of the T–1 aircraft at the time the so-called T–1 assembly complete contract line item was accepted, describing the remaining work as minimal. The aircraft did not fly for another 9 months.

Established government oversight and internal management control processes, including the cognizant staff functions of the Under Secretary of Defense for Acquisition, the defense contract management command and the Defense Contract Audit Agency, which would have otherwise detected or prevented the questionable actions, were impaired by Air Force officials. Those officials provided incomplete and misleading information, and in some cases relied on intimidation and abuse of their positions of responsibility and caused improper actions to be taken.

The C–17 System Program Director and the Air Force program executive officer failed to acknowledge timely, report accurately or respond properly to the deteriorating contract cost and schedule performance on the C–17. This resulted in an RDT&E funding shortfall that occurred in the fourth quarter of 1990.

The negative cost performance and the projected funding shortfall were apparent from contractor reports as early as January 1990. However, proper corrective action was not initiated by the program executive officer and System Program Director.

The System Program Director, the Deputy Comptroller, Air Force Systems Command, and the Deputy Chief of Staff for Contracting, Air Force Systems Command, improperly interfered with the process for administration of government progress payments, providing unsubstantiated and misleading information to senior acquisition officials and cognizant contract administration personnel at the defense plant representative office, Long Beach, CA, to cause premature contract payments.

The C–17 System Program Director had primary responsibility, authority and accountability for management of the C–17 program, and was, in our opinion, keenly aware of the nature and inter-

relationships of all of the questionable actions taken to assist the contractor.

The System Program Director, with support from the C–17 Deputy Director for Contracting, misused the authority he had for procurement functions in at least three ways: One, the System Program Director and the C–17 Deputy Director for Contracting provided an improper technical assessment to the Defense Contract Audit Agency on the propriety of an accounting practice change that was intended primarily to charge development cost to procurement appropriations.

Establishing a transition point for sustaining engineering costs that was known to be improper and based on deficient work resulted in a cost allocation methodology that charged costs to the wrong appropriations.

Two, the System Program Director and the C–17 Deputy Director of Contracting improperly modified the C–17 contract based on a schedule known to be unachievable, with inadequate consideration received from the contractor for schedule slippage and establishment of an arbitrary contract line item to reduce contractor financial risk.

The contract line item was priced to the advantage of the contractor. Subsequent acceptance of the contract line item was premature and completed without resolution of potential quality deficiencies.

Three, the System Program Director and the C–17 Deputy Director of Contracting improperly delayed adjustment of the progress payment rate recommended by the cognizant Defense Contract Audit Agency and defense plant representative offices.

We believe the C–17 Deputy Director of Contracting failed to fulfill his responsibilities to ensure contractors receive impartial and equitable treatment, not preferential treatment, in accordance with law and regulations.

Mr. ENGLISH. I hate to interrupt at this point, Mr. Chairman——

Mr. CONYERS. For what purpose does the gentleman seek recognition?

Mr. ENGLISH. I wonder if it wouldn't be appropriate for Mr. Vander Schaaf to give us the names of the individuals who hold those titles as opposed to just titles.

Mr. VANDER SCHAAF. I can do that for most of them.

We have concerns about privacy considerations on one due to the individuals's relatively lower rank.

The System Program Director was Brig. Gen. Michael Butchko. The Deputy Comptroller of the Air Force Systems Command was Brig. Gen. John Nauseef. The Chief of Staff for Contracting, Air Force Systems Command was Ms. Darleen Druyun, and the other name I mentioned, the Assistant Secretary of the Air Force for Acquisition, was Mr. Jack Welch.

We have deleted one name from our public statements, although it is a close call whether or not it has to be deleted. Under the circumstances, I would rather not give the name of the C–17 Deputy Director for Contracting in an open hearing.

The key individuals were three general officers an Assistant Secretary of the Air Force, and a senior contracting official.

Mr. RAU. If I may, the additional Air Force general is Major General Barry, former program executive officer for the C–17 program.

Mr. VANDER SCHAAF. The officials that we are talking about are no longer in these positions, by the way.

The next part of my written statement deals with the role of the Assistant Secretary of the Air Force for Acquisition. We believe that he failed to demand that the contractor formally request financial assistance from the government, including full disclosure of relevant financial information if assistance was considered necessary.

Improper actions were taken with the knowledge of the Assistant Secretary, who is ultimately responsible for Air Force acquisition matters and the only person who could reasonably have exercised control over so many different Air Force acquisition officials.

The Assistant Secretary was kept informed of developments on the C–17 contract and progress payment matters by Air Force officials and the contractor. In our opinion, the Assistant Secretary should have demanded that his staff comply fully with established regulations and contract terms, and followed up to ensure actions taken did in fact comply with legal and contractual requirements.

Additionally, the Assistant Secretary failed to inform completely and accurately the Under Secretary of Defense for Acquisition of the actions planned and being taken to assist McDonnell Douglas Corp. Instead, he permitted less than complete briefings to be made that did not solicit guidance and left no basis for informed decisionmaking.

Subsequently, the briefings were used to imply to others charged with oversight and administration of the C–17 contract that the Under Secretary and his staff approved the Air Force position and actions.

The position of the Under Secretary of Defense for Acquisition and his staff was that he demanded compliance with acquisition regulations and that the contractor must request financial assistance in accordance with these regulatory requirements.

The Assistant Secretary of the Air Force for Acquisition failed to implement the direction of the Under Secretary and instead sought means of providing financial assistance without insisting on an above-board process involving candid disclosure of C–17 program problems and McDonnell Douglas Corp. financial difficulties.

The defense plant representative office also repeatedly requested contractor disclosure of its financial condition during August and September 1990 for consideration in progress payment administration.

The defense plant representative office efforts were thwarted by Air Force officials who implied that their actions had been approved by the Under Secretary of Defense for Acquisition. The actions taken by senior Air Force officials resulted in improper financial assistance to the contractor and covered up the need to establish an executable program schedule.

Additionally, the contractor acted, partly with the support and approval of Air Force officials, to suppress negative financial information concerning losses on the program. The contractor's financial reports failed to disclose adequate loss contingencies because reasonable efforts to estimate losses were not made.

I should add that I did refer this matter to the Chairman of the Securities and Exchange Commission. They have obviously had access to all our records and are looking at the matter at this moment.

Our findings reflect the failure of management controls in the DOD acquisition system. I want to finish discussing the C–17 and then get to what is the systemic problem here.

Management controls that would have otherwise been effective were circumvented through abuse of authority, resulting in inequitable treatment to the advantage of the contractor. Air Force officials, and in particular the C–17 System Program Director, acted to create an appearance of propriety for their actions, and plausible deniability for any accountability on their part.

For example, the System Program Director attempted to limit or lower the estimate at completion used by the Administrative Contracting Officer, at the defense plant representative office at Long Beach in order to increase progress payments.

Since the determination of the estimate at completion to be used is made by the Administrative Contracting Officer, the System Program Director viewed the Administrative Contracting Officer as solely accountable regardless of how much pressure he and other Air Force officials used to encourage premature payments and overpayments.

Similarly, the System Program Director considered the Defense Contract Audit Agency responsible for "approving" the improper accounting practice change shifting RDT&E engineering costs to production lots despite the faulty technical assessment provided to the Defense Contract Audit Agency by the C–17 program office.

The present DOD acquisition system is a compromise between civilian control of acquisition decisions and military control of military career progression, including officer promotions, assignments, and awards. The extraordinary actions taken in the C–17 program highlight the inherent weakness in this compromise arrangement.

The System Program Director viewed assisting the contractor financially as critical to continuation of the program and acted to do so at a time when he was being considered for promotion to major general. The performance evaluations of the System Program Director emphasized how well the C–17 program was being managed, and how cost and schedule has been stabilized.

The C–17 program clearly was in jeopardy under the weight of its own cost overruns, schedule delays, and technical problems. The System Program Director, with the assistance in some cases of the Deputy Comptroller, Air Force Systems Command, used his rank and position to direct or influence a wide range of improper actions. He was subsequently praised for his performance and promoted by the Air Force.

Conversely, the defense plant representative office commander, an Air Force colonel, acted to protect the government interest and was criticized for not being a "team player." Eventually, he paid a price in future assignments determined by the Air Force that resulted in his retirement decision. This is both ironic and extremely distressing.

This individual, Colonel Tollefson, has testified on the C–17 program before the House Armed Services Committee and this Committee on various occasions, I believe.

We found numerous similarities between the management of the failed Navy A–12 program and the Air Force C–17 program during the fall of 1990. The Navy, however, conducted an administrative inquiry into the management of the A–12 program while the Air Force, and in particular the Air Force general counsel and Assistant Secretary of the Air Force for Acquisition, refused to do so. Additionally, the Navy, with the endorsement of the Under Secretary of Defense for Acquisition, acted to affix accountability for the errors in judgment and improper actions taken by senior acquisition officials. Nevertheless, both the Navy and Air Force decided to promote the program managers, indicating that the military departments' criteria for promotion of military acquisition officials are flawed.

We simply cannot afford yet another A–12 or C–17 type debacle. I believe that a fundamental change in management structure is necessary so that acquisition officials are more accountable to the Under Secretary of Defense for Acquisition rather than their individual military departments.

Additionally, to curtail the potential for undue influence on contract administration matters, the independence of the defense plant representative office from the military department must be strengthened to assure objectivity in decisionmaking by the defense plant representative office.

A lot has been done in this area. I don't think my written statement properly emphasizes that. The defense plant representative office came under a new command called the defense contract management command in July 1990. These actions were taking place concurrently with that and the new command was just getting its legs, if you will, and it was probably somewhat easier to intimidate them at that time than it would be today.

I can't be absolutely sure, but I do believe the possibility exists that the newness of the contract administration office made it more vulnerable to pressure from the Air Force.

Organizational independence and objectivity are absolutely essential to effective internal management control achieved through separation of program management, procurement and contract administration responsibilities.

We made several recommendations in our report. We recommended disciplinary action against individuals as warranted by their actions.

Our other recommendations focus us on enhancing the independence of the procurement activities and establishing management accountability to the milestone decision authority for major defense acquisition programs.

We made the following three specific recommendations:

One, the Deputy Secretary of Defense provide full authority for selection, promotion, evaluation, and removal of program executive officers, program directors and program managers to the Under Secretary of Defense for Acquisition for all major defense acquisition programs.

Two, we said that the Secretary of the Air Force should take appropriate disciplinary action against the individuals involved in improper actions and direct that an Anti-Deficiency Act violation investigation be conducted on the C–17 progress payment requests beginning with No. 97.

Three, the Under Secretary of Defense for Acquisition direct that contract management functions for major defense acquisition programs are made organizationally independent of the authority and supervision of program management officials.

In response to our report, on February 19, 1993, the Secretary of Defense requested that the Secretary of the Air Force provide any additional factual information, along with a proposed response to our recommendation that disciplinary action be taken against five Air Force officials, within 60 days.

The Secretary of Defense also provided these individuals the opportunity to respond to the findings in the report. Subsequently, on February 23, 1993, the Acting Secretary of the Air Force appointed his acting general counsel to perform an administrative inquiry to be completed by April 13, 1993.

We are cooperating fully with the Air Force administrative inquiry team commensurate with our responsibility to protect individuals who assisted us in our review from possible reprisal. We are awaiting results of the Air Force administrative inquiry before taking further action, if any.

The Secretary of Defense has also requested the Under Secretary of Defense for Acquisition to provide proposed responses to the other recommendations in our report within 60 days.

We consider those actions by the Secretary of Defense to be both responsive and timely.

At some point in today's hearing, I want to discuss the period between the time the Secretary of Defense took action on February 19 and the time when we issued the report on January 14, because we had difficulties during that period.

Mr. CONYERS. Let's talk about it now.

Mr. VANDER SCHAAF. The situation was as follows: When we issued this report, it contained information that was potentially contractor proprietary so we restricted initial distribution to inside the government, except for McDonnell Douglas. We wanted to be sure that we gave the McDonnell Douglas Corp. an opportunity to tell us what was proprietary in their eyes; that is, which date would influence their competitive position and thus be covered under the Trade Secrets Act.

I had a responsibility to provide this report to the Secretary of the Air Force, to this committee, and to the Armed Services Committee. I called appropriate people—to include the Assistant Secretary of the Air Force for Financial Management, who was a recipient of the report as a matter of routine because of the way our reports are processed—about the situation. I asked them not to do anything publicly with respect to the report until we gave the corporation a chance to respond to the issue of what was protected proprietary data.

I asked the same of the staffs of committees here to make sure they handled the report accordingly. Things seemed to be going fine.

A couple of days later, the outgoing Secretary of the Air Force announced he was going to hire an independent consultant to review our actions. I thought this was kind of a gut reaction. "We don't like this report so we are going to hire someone to attack it." No one from the Air Force came to ask to look at the detailed backup papers. They decided immediately that the report must be wrong and they needed another independent review.

We gradually found out what was involved in this "independent" review. We began to get excited because immediately alarm bells rang: "Wait a minute. It looks like they are already hiring legal assistance for these people and contracting out a governmental function."

A copy of our report was sent to a law firm in Washington despite the official use only restriction on it. We still hadn't cleared this thing for proprietary data. Moreover, the contract was offered to the law firm in Washington without competition. I will put the letter in the record.

Mr. CONYERS. Without objection, so ordered.

[The information follows:]

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-2884

JAN 22 1993

MEMORANDUM FOR ACTING SECRETARY OF THE AIR FORCE

SUBJECT: DoDIG Report on the C-17 Program, "Government Actions Concerning McDonnell Douglas Corporation Financial Condition During 1990," January 14, 1993

The purpose of this memorandum is to recommend that you withdraw, in writing, the memorandum issued by Secretary Rice on January 19, 1993, regarding his intention to contract with an "independent outside advisor" to provide a "complete review, analysis and assessment" of the subject report. I also recommend that you rescind the letter dated January 20, 1993, from Ms. Ann C. Petersen, former General Counsel of the Air Force, to [redacted] of the law firm [redacted] In the letter, Ms. Petersen informed [redacted] that the Air Force intended to engage [redacted] to serve as the independent advisor and forwarded a copy of the subject report. You should also retrieve all copies of the report.

I believe it is wholly inappropriate, not to mention a waste of taxpayers' money, to engage an outside advisor to perform functions that officers or employees of the Air Force should be capable of performing. There is also a serious question as to whether reviewing the report, in which we recommend appropriate disciplinary action against three general officers and two civilian officials, is an inherently governmental function which cannot be contracted to "outside" advisors.

Further, I want to be unequivocal on one point--none of our workpapers or supporting documentation will be provided to anyone in the capacity of "independent outside advisor" for purposes of allowing them to review, analyze, or assess this report or any other report issued by the Office of the Department of Defense Inspector General.

Apart from the general inappropriateness of engaging an outside advisor for this purpose, we have serious concerns about the manner in which this matter was handled. Apparently, the Air Force intended to engage [redacted] services on a sole-source basis, which may violate the Competition in Contracting Act (see 10 U.S.C. 2304). It should also be noted that there appears to have been no attempt to ascertain or document whether [redacted] law firm represents any government contractors that may have a financial interest in the C-17 contract. Finally, I was astounded that a copy of our report had been forwarded by Ms. Petersen to [redacted] in anticipation of engaging [redacted] as an independent advisor. The report, which has not yet been released to the public, bears the clear warning:

This report contains contractor information that may be company confidential or proprietary. Title 18 U.S.C. Section 1905 and 41 U.S.C. 423 provide specific penalties for the unauthorized disclosure of company confidential or proprietary information. The document must be safeguarded in accordance with DoD Regulation 5400.7-R.

Therefore, I would ask you to retrieve from [redacted] any and all copies of the subject report.

Please advise me of the actions you take in response to this memorandum.

Derek J. Vander Schaaf
Deputy Inspector General

Mr. VANDER SCHAAF. I had to write the Acting Secretary of the Air Force and say "Knock this off. This is ridiculous. You are engaging people who are going to review actions about disciplinary matters involving Air Force people."

I think the government is capable of undertaking such actions on its own. It wasn't until Secretary Aspin got on board and got this straightened out that we got off this kick. Things seem to be straight now at least.

I will make that letter a matter of record.

I was unwilling to provide our working papers to some law firm especially when we don't know if they have conflicts of interest because of the defense contractors they represent. There are all kinds of questions raised by the kind of knee-jerk reaction that took place in response to this report. So I think that I can stop talking about that business.

Now, the next part that we want to deal with is the report on the C–17, that we issued in May of last year. It was done at the request of the Senate Armed Services Committee and what we looked at there was this issue of what are the alternatives to the C–17 and has the Department properly reviewed them.

We concluded that none of the previous analyses had determined the most cost-effective mix of aircraft for a total airlift fleet which potentially could be composed of C–17's, C–141's that had undergone a service life extension program, C–5's, C–130's and so forth.

Our recommendations, which were incorporated into the National Defense Authorization Act for fiscal year 1993, included conducting a Defense Acquisition Board program review prior to the award of the lot 5 production contract and performing a formal cost and operational effectiveness analysis of complimentary mixes of airlift aircraft.

In view of what has happened, we made that recommendation last May to get the review done before they award lot 5. Lot 4 has not been awarded yet. I understand that lot 4 is sort of in a holding pattern here. I would recommend now that they not award lot 4 either until we do this cost and operational effectiveness analysis. That process also seems to be on track. I understand the Institute for Defense Analysis is looking at these problems and making comparisons.

During the questioning, sir, we will be prepared to discuss that.

I don't think I am going—my statement deals on pages 21 and 22 with actions which eventually resulted in about $172 million being moved from RDT&E to procurement retroactively. Mischarging for C–17 engineering costs is a continuing problem.

There are two letters attached to my statement. One was a letter to the Acting Secretary of the Air Force dated February 5 and the Acting Secretary's reply of March 1 concerning this Anti-Deficiency Act matter.

In the interest of time, I will not comment further on that and we are prepared to discuss it in more detail should the committee desire.

I have probably gone on long enough, sir.

Mr. CONYERS. Thank you, Mr. Vander Schaaf.

[The prepared statement of Mr. Vander Schaaf follows:]

HOLD FOR RELEASE
UNTIL DELIVERY
EXPECTED 10:00 A.M.
MARCH 17, 1993

STATEMENT BY

DEREK J. VANDER SCHAAF

DEPUTY INSPECTOR GENERAL

DEPARTMENT OF DEFENSE

BEFORE THE

HOUSE COMMITTEE ON GOVERNMENT OPERATIONS

SUBCOMMITTEE

ON

LEGISLATION AND NATIONAL SECURITY

REGARDING THE AIR FORCE C-17 AIRLIFTER PROGRAM

Chairman Conyers and Members of the Subcommittee:

I am pleased to appear today in response to your request that we discuss our recent reviews involving the McDonnell Douglas Corporation and, in particular, the Air Force C-17 program. I am accompanied today by Mr. Robert Lieberman, Mr. Russell Rau and Mr. Kenneth Stavenjord from our audit shop.

We would first like to discuss our two most recent reports on "C-17 Aircraft Wing Mechanical Fasteners Quality and Acceptance," and "Government Actions Concerning McDonnell Douglas Corporation Financial Condition During 1990." We will also briefly discuss the present status of two other completed reviews of "Cost Effectiveness Analyses for the Air Force C-17 Aircraft Program," and "Audit of Contractor Accounting Practice Changes for C-17 Engineering Costs" that I previously addressed in testimony before you.

TECHNICAL ASSESSMENT OF WING FASTENERS

Our review of C-17 aircraft wing fasteners, which I mentioned during my May 13, 1992 testimony regarding the C-17 aircraft program, has been completed. We evaluated the riveting and the quality assurance program for that riveting in C-17 aircraft wings. We also evaluated the quality assurance program for two-piece fasteners in the C-17 aircraft wings. Our final

report, "C-17 Aircraft Wing Mechanical Fasteners Quality and Acceptance," was issued on March 1, 1993.

We found that rivets in C-17 aircraft wings met the acceptable lower limits for rivet expansion. However, the amount of rivet expansion actually in C-17 lower wing skins was greater than any experimentally justified range presented. The Government failed to ensure that the contractor set upper limits for acceptable rivet expansion in lower C-17 wing skins, based rivet expansion limits on a complete set of tests, or tested for damage tolerance with the amount of expansion actually happening in C-17 wings. The Government is not protected from the possible adverse effects of the amount of rivet expansion actually in C-17 wings by either the planned durability tests or the C-17 contract warranty.

The fuel leaks in flight test aircraft T-1 were not caused by inadequate riveting, as speculated by some observers at the time. However, two-piece fasteners were improperly installed in C-17 wings and caused some of the leaks. The Government did not ensure that Douglas Aircraft Company assigned inspection of two-piece fasteners to quality assurance personnel at the fabrication level.

The quality assurance program for C-17 wing mechanical fasteners was not in compliance with Military Specification MIL-A-9858A, "Quality Program Requirements." Procedures were not

followed, and in some instances were confusing or nonexistent. As a result, fastener quality was inconsistent and quality assurance data were missing or incomplete. Our concerns that the deficiencies we identified are systemic were confirmed by a Special Program Performance Review, conducted in October 1992 by the Defense Contract Management Command in response to our draft report.

RECOMMENDATIONS

To ensure riveting quality, we recommended that tests be conducted to determine the potential risks posed by the amount of rivet expansion (from .010 to .020 inch) identified in the report. We also recommended withholding funds or extending warranty coverage to protect the Government from possible adverse effects from the amount of rivet expansion actually in C-17 wings.

Concerning the quality assurance program, we recommended that the contractor not be allowed to have exceptions to prescribed rivet expansion limits; that rivet expansion limits be based on complete testing; and that Douglas Process Standards be revised to state the acceptance requirements for rivet samples clearly and completely. For two-piece fasteners, we recommended that quality assurance personnel be assigned to inspect those fasteners at the fabrication level. We also recommended a review of the entire quality assurance program for the C-17 aircraft to

determine whether the deficiencies identified in this report are systemic.

Further, we recommended that the Air Force either conduct independent stress-corrosion and fatigue tests to assess the potential effect from the amount of expansion identified in the lower wing panels or ensure DAC conducts such comprehensive tests under Government supervision.

The Air Force agreed with the portion of our report showing that underexpanded rivets are not a problem on the C-17 aircraft. They generally nonconcurred with all parts of the report involving criticism of the program, including all recommendations addressed to the Air Force. Those recommendations concern additional testing, extended warranty or withhold of funds to protect the Government's interest, and funding rivet expansion research. The Air Force responded that additional tests were unnecessary and would create needless costs. We again asked the Air Force to reevaluate its response in view of the incompleteness of the tests done so far. The Air Force stated that the current warranty provides for defect correction. We asked the Air Force to reevaluate its position, since the potential effects from the amount of expansion actually in C-17 wings would not appear during the current warranty period. The Air Force also stated that additional study is not necessary because it already has a substantial body of knowledge and experience to support its position on fatigue from the amount of

rivet expansion in C-17 wings. We requested that the Air Force either reevaluate its response or come forward with the theoretical information to substantiate its position. We have been asking to see any such information for months.

The Defense Logistics Agency (DLA) nonconcurred with two recommendations addressed to it concerning the amount of rivet expansion and concerning two-piece fastener quality. The DLA stated that its position on expansion standards and effects of the amount of expansion actually in C-17 wings, as well as its decisions to use overexpanded rivets "as is," was based on adequate testing. Because the testing referred to by DLA did not include stress-corrosion tests or fatigue tests for all the materials, tempers, dimensions, and rivet expansions of the structures they were purported to represent, we asked that the DLA reevaluate its position. We also continue to believe the DLA needs to address the lack of quality assurance inspections assigned at the fabrication level for two-piece fasteners.

The DLA concurred with two other recommendations. The Agency promised to ensure that any potential effects of rivet expansion found in the tests we recommended would be corrected. The DLA also agreed with the need for a review of the entire C-17 quality assurance program. The review was promptly completed and confirmed our concerns that deficiencies described in this report are systemic. In fact, numerous problems were found in a wide range of management systems, processes and products.

Although management comments on the draft report were fully considered, we made relatively few changes to the draft. In general, we found the management comments to be nonresponsive. Much of the information which the Air Force initially said it had in its possession to prove conclusively there was no problem was not provided or, when eventually provided, did not support the Air Force position. The key point is that the test reports presented to us since our review began do not include either stress-corrosion tests with the same materials and rivet expansions of the lower wing panels, or fatigue tests with the amount of rivet expansion actually in the C-17 wings. We do not know if comprehensive tests performed with C-17 materials would indicate a significant, long term durability risk. If such tests were to indicate minimal risk, we would withdraw our recommendations for more aggressive actions related to withholds or warranties. We strongly believe, however, that neither the Air Force nor the contractor have demonstrated they know what the risk is.

We requested that the Air Force and the DLA provide comments to the final report by April 30, 1993. Under DoD procedures for handling reports of this nature from my office, we will evaluate those comments, attempt to negotiate any unresolved issues, and elevate any matters that cannot be settled otherwise to the Deputy Secretary of Defense for adjudication.

CONGRESSIONALLY REQUESTED REVIEW OF EFFORTS TO PROVIDE FINANCIAL ASSISTANCE TO MCDONNELL DOUGLAS CORPORATION

Mr. Chairman, I will now shift my focus to the DoD actions taken in response to MDC financial problems during 1990. These financial problems also involved improper appropriated fund accounting by the Air Force.

Our February 1992 report entitled "Audit of Contractor Accounting Practice Changes for C-17 Engineering Costs," stated that reallocation of engineering costs from development to production, to overcome shortfalls in development funding, appeared to be part of an overall plan in 1990 to provide additional financing to McDonnell Douglas Corporation, of which the Douglas Aircraft Company is a part. In addition, our audit report on "Contracting Practices for the C-17 Flight Test Aircraft," dated April 10, 1992, stated that establishment, pricing, and Air Force acceptance of the completed assembly of the C-17 Flight Test Aircraft, "T-1 Assembly Complete," contract line item appeared to be part of the same plan.

You requested in February 1992 that we further review the concerted and planned effort by the DoD to increase the cash flow of MDC during late 1990. We conducted an extensive inquiry and issued our report, "Government Actions Concerning McDonnell Douglas Corporation Financial Condition During 1990," on January 14, 1993. We described how Air Force officials

implemented a series of actions to provide financial assistance to McDonnell Douglas during August through December 1990 to ensure the contractor kept working on the C-17 Program. The plan also addressed research, development, test and evaluation (RDT&E) funding shortfalls that occurred because of premature progress payments and reductions in RDT&E appropriations. The actions centered on meeting contractor cash flow requirements without requiring the McDonnell Douglas Corporation to disclose the nature or extent of its financial difficulties, as required by acquisition regulations for advance or unusual payments. Expedited Government payments were made that exceeded what was justified based on work performed by $349 million. Also, financing provided to the contractor exceeded the fair value of undelivered work by an additional $92 million, which was not timely recouped. Improper contracting actions reduced contractor financial risk on the C-17 Program by $1.6 billion and created a false appearance of success to facilitate the contractor obtaining additional financing through commercial sources and issuance of debt securities.

The Congress was deliberating on a wide range of FY 1991 procurement funding levels for the C-17 Program during September and October 1990. As a result of how the Air Force handled these matters, the Congress did not have the benefit of accurate information on the program's status during those deliberations. There was no public recognition of the overruns on the contract or acknowledgement of significant schedule slippage.

Additionally, through Air Force approval of improper cost allocations, procurement funds were used to continue paying C-17 development costs after RDT&E funds were exhausted. The responsible Air Force officials considered their actions necessary for continuing work on the Program because of the cash flow difficulties being experienced by the contractor and contractor threats to stop work on the C-17 Program. However, those cash flow difficulties were largely the result of problems with commercial rather than Government contracts. Those actions substantially increased Government program risk, provided premature payments to the contractor, negatively impacted first aircraft delivery, and contractually obligated the Government to award a subsequent Lot III production contract. Award of the Lot III production contract was particularly important because it provided an additional source of funding to the contractor, and a further false indication of program success. The actions also resulted in what we believe are violations of statutes and acquisition regulations.

Statutory and regulatory provisions exist for providing financial assistance to contractors under certain conditions, including financial hardship. Those provisions were not applied although their use was warranted by the circumstances. Rather, the Air Force officials chose to make improper concessions to the contractor, contrary to the intent and direction of the Under Secretary of Defense for Acquisition.

Contract modifications were executed that were disadvantageous to the Government. The C-17 System Program Director falsely described the contractor as meeting the production schedule in order to permit modification of the C-17 contract. Subsequently, incomplete work was accepted. The System Program Director falsely described the condition of the T-1 aircraft at the time the "T-1 Assembly Complete" contract line item was accepted, describing remaining work as minimal. The aircraft did not fly for another nine months.

Established Government oversight and internal management control processes, including the cognizant staff functions of the Under Secretary of Defense for Acquisition, the Defense Contract Management Command, and the Defense Contract Audit Agency, which would have otherwise detected or prevented the questionable actions, were impaired by Air Force officials. Those officials provided incomplete and misleading information, and, in some cases, relied on intimidation and abuse of their positions of responsibility to cause improper actions to be taken.

The C-17 System Program Director and the Air Force Program Executive Officer failed to acknowledge timely, report accurately, or respond properly to the deteriorating contract cost and schedule performance on the C-17 Program, which resulted in the RDT&E funding shortfall that occurred in the fourth quarter of FY 1990. The negative cost performance and the

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projected funding shortfall were apparent from contractor reports as early as January 1990. However, proper corrective action was not initiated by the Program Executive Officer and System Program Director.

The C-17 System Program Director; the Deputy Comptroller, Air Force Systems Command; and the Deputy Chief of Staff for Contracting, Air Force Systems Command, improperly interfered with the process for administration of Government progress payments, providing unsubstantiated and misleading information to senior acquisition officials and cognizant contract administration personnel at the Defense Plant Representative Office, Long Beach, California, to cause premature contract payments.

The C-17 System Program Director had primary responsibility, authority and accountability for management of the C-17 Program, and was, in our opinion, keenly aware of the nature and interrelationship of all the questionable actions taken to assist the contractor. The System Program Director, with support from the C-17 Deputy Director of Contracting, misused the authority he had for procurement functions in at least three ways.

One, the System Program Director and the C-17 Deputy Director of Contracting provided an improper technical assessment to the Defense Contract Audit Agency on the propriety of an accounting practice change that was intended primarily to charge

development costs to procurement appropriations. Establishing a transition point for sustaining engineering costs that was known to be improper and based on deficient work resulted in a cost allocation methodology that charged costs to the wrong appropriations.

Two, the System Program Director and the C-17 Deputy Director of Contracting improperly modified the C-17 contract based on a schedule known to be unachievable, with inadequate consideration received from the contractor for schedule slippage and establishment of an arbitrary contract line item to reduce contractor financial risk. The contract line item was priced to the advantage of the contractor. Subsequent acceptance of the contract line item was premature and completed without resolution of potential quality deficiencies.

Three, the System Program Director and the C-17 Deputy Director of Contracting improperly delayed adjustment of the progress payment rate recommended by the cognizant Defense Contract Audit Agency and Defense Plant Representative Offices.

We believe the C-17 Deputy Director of Contracting failed to fulfill his responsibilities to ensure contractors receive impartial and equitable treatment, not preferential treatment, in accordance with law and regulations.

The Assistant Secretary of the Air Force (Acquisition) failed to demand that the contractor formally request financial assistance from the Government, including full disclosure of relevant financial information if assistance was considered necessary. Improper actions were taken with the knowledge of the Assistant Secretary, who is ultimately responsible for Air Force acquisition matters and the only person who could reasonably have exercised control over so many different Air Force acquisition officials. The Assistant Secretary was kept informed of developments on the C-17 contract and progress payment matters by Air Force officials and the contractor. In our opinion, the Assistant Secretary should have demanded that his staff comply fully with established regulations and contract terms, and followed up to ensure actions taken did in fact comply with legal and contractual requirements. Additionally, the Assistant Secretary failed to inform completely and accurately the Under Secretary of Defense for Acquisition of the actions planned and being taken to assist McDonnell Douglas Corporation. Instead, he permitted less than complete briefings to be made that did not solicit guidance and left no basis for informed decision making. Subsequently, the briefings were used to imply to others charged with oversight and administration of the C-17 contract that the Under Secretary and his staff approved the Air Force position and actions.

The position of the Under Secretary of Defense for Acquisition and his staff was that compliance with acquisition

regulations was essential and the contractor must request financial assistance in accordance with regulatory requirements. The Assistant Secretary of the Air Force (Acquisition) failed to implement the direction of the Under Secretary and instead sought means of providing financial assistance without insisting on an above-board process involving candid disclosure of C-17 Program problems and McDonnell Douglas Corporation financial difficulties. The Defense Plant Representative Office also repeatedly requested contractor disclosure of its financial condition during August and September 1990 for consideration in progress payment administration. The Defense Plant Representative Office efforts were thwarted by Air Force officials who implied that their actions had been approved by the Under Secretary of Defense for Acquisition. The actions taken by senior Air Force officials resulted in improper financial assistance to the contractor and covered up the need to establish an executable program schedule.

Additionally, the contractor acted, partly with the support and approval of Air Force officials, to suppress negative financial information concerning losses on the Program. The contractor's financial reports failed to disclose adequate loss contingencies because reasonable efforts to estimate losses were not made.

DOD ACQUISITION SYSTEM CONSIDERATIONS

Our findings reflect the failure of management controls in the DoD acquisition system. Management controls that would have otherwise been effective were circumvented through abuse of authority, resulting in inequitable treatment to the advantage of the contractor. Air Force officials, and in particular the C-17 System Program Director, acted to create an appearance of propriety for their actions, and plausible deniability for any accountability on their part. For example, the System Program Director attempted to limit or lower the Estimate at Completion used by the Administrative Contracting Officer in order to increase progress payments. Since the determination of the Estimate at Completion to be used is made by the Administrative Contracting Officer, the System Program Director viewed the Administrative Contracting Officer as solely accountable regardless of how much pressure he and other Air Force officials used to encourage premature payments and overpayments. Similarly, the System Program Director considered the Defense Contract Audit Agency responsible for "approving" the improper accounting practice change shifting engineering costs to production lots despite the faulty technical assessment provided to the Defense Contract Audit Agency by the C-17 Program Office.

The present DoD acquisition system is a compromise between civilian control of acquisition decisions and military control of military career progression, including officer promotions,

assignments, and awards. The extraordinary actions taken in the C-17 Program highlight the inherent weakness in this compromise arrangement. The System Program Director viewed assisting the contractor financially as critical to continuation of the Program and acted to do so at a time when he was being considered for promotion to major general. The performance evaluations of the System Program Director emphasized how well the C-17 Program was being managed, and how cost and schedule had been "stabilized." The C-17 Program clearly was in jeopardy under the weight of its own cost overruns, schedule delays and technical problems. The System Program Director, with the assistance of the Deputy Comptroller, Air Force Systems Command, used his rank and position to direct or influence a wide range of improper actions. He was subsequently praised for his performance and promoted by the Air Force. Conversely, the Defense Plant Representative Office Commander, an Air Force colonel, acted to protect the Government interest and was criticized for not being a "team player." Eventually, he paid a price in future assignments determined by the Air Force that resulted in his retirement decision. This is both ironic and extremely distressing.

We found numerous similarities between the management of the failed Navy A-12 Program and the Air Force C-17 Program during the fall of 1990. The Navy, however, conducted an administrative inquiry into the management of the A-12 Program while the Air Force, and in particular the Air Force General Counsel and Assistant Secretary of the Air Force (Acquisition), refused to do

so. Additionally, the Navy, with the endorsement of the Under Secretary of Defense for Acquisition, acted to affix accountability for the errors in judgment and improper actions taken by senior acquisition officials. Nevertheless, both the Navy and Air Force decided to promote the program managers, indicating that the Military Departments' criteria for promotion of military acquisition officials are flawed.

We simply cannot afford yet another A-12 or C-17 debacle. I believe that a fundamental change in management structure is necessary so that acquisition officials are more accountable to the Under Secretary of Defense for Acquisition rather than their individual Military Department. Additionally, to curtail the potential for undue influence on contract administration matters, the independence of the Defense Plant Representative Office from the Military Departments must be strengthened to assure objectivity in decisionmaking by the Defense Plant Representative Office. Organizational independence and objectivity are absolutely essential to effective internal management control achieved through separation of program management, procurement and contract administration responsibilities.

RECOMMENDATIONS

Our recommendations focus on enhancing the independence of procurement activities and establishing management accountability to the milestone decision authority for major Defense acquisition

programs. We recommended disciplinary action against individuals as warranted by their actions.

We made the following three specific recommendations:

One, the Deputy Secretary of Defense provide full authority for selection, promotion, evaluation and removal of Program Executive Officers, Program Directors and Program Managers to the Under Secretary of Defense for Acquisition for all major Defense acquisition programs.

Two, the Secretary of the Air Force take appropriate disciplinary action against the former C-17 Program Executive Officer, former Deputy Chief of Staff for Contracting at the Air Force Systems Command, former C-17 System Program Director, former Deputy Comptroller for the Air Force Systems Command, and the C-17 Deputy Director of Contracting; and direct that an Anti-Deficiency Act violation investigation be conducted on the C-17 Progress Payment Request Number 97.

Three, the Under Secretary of Defense for Acquisition direct that contract management functions for major Defense acquisition programs are made organizationally independent of the authority and supervision of program management officials, including Program Executive Officers, Program Directors, and Program Managers; issue policy requiring that unliquidated progress payments always exceed fair value, including where a contract is

in a loss position, as determined by the recognized fair value test in the Federal Acquisition Regulation; issue policy requiring the recoupment of any excess unliquidated progress payments after loss ratio and fair value test application; and emphasize the need for contracting officers to exercise independence and objectivity in business judgment in accordance with Federal Acquisition Regulation provisions.

In response to our report, on February 19, 1993 the Secretary of Defense requested that the Secretary of the Air Force provide any additional factual information along with a proposed response to our recommendation that disciplinary action be taken against five Air Force officials within 60 days. The Secretary of Defense also provided these individuals the opportunity to respond to the findings in the report. Subsequently, on February 23, 1993, the Acting Secretary of the Air Force appointed his Acting General Counsel to perform an administrative inquiry to be completed by April 13, 1993. We are cooperating fully with the Air Force administrative inquiry team commensurate with our responsibility to protect individuals who assisted us in our review from possible reprisal. We are awaiting results of the Air Force administrative inquiry before taking further action, if any, that may be required of us. The Secretary of Defense has also requested the Under Secretary of Defense for Acquisition to provide proposed responses to the other recommendations in our report within 60 days. We consider

those actions by the Secretary of Defense to be both appropriate and timely.

REVIEW OF C-17 COST EFFECTIVENESS ANALYSES

On July 19, 1991, the Senate Armed Services Committee requested in its Report on the National Defense Authorization Act for Fiscal Years 1992 and 1993 that we review "...the Department of Defense's and the Air Force's life cycle cost and performance analyses, and provide an independent assessment of whether these analyses are still valid." On May 12, 1992, we issued our report, "Cost-Effectiveness Analyses for the Air Force C-17 Program." We concluded that existing analyses adequately supported continuation of the C-17 Program, but were limited in important respects. The Air Force had not conducted an updated Cost and Operational Effectiveness Analysis even though major changes affecting the Program had occurred. None of the previous analyses had determined the most cost-effective mix of aircraft for the total airlift fleet, which potentially could be comprised of C-17's, C-141's that had undergone a service life extension program, C-5's, C-130's, and other airlift assets.

Our recommendations, which were incorporated into the National Defense Authorization Act for Fiscal Year 1993, included conducting a Defense Acquisition Board program review prior to the award of the Lot V production contract and performing a formal Cost and Operational Effectiveness Analysis of

complimentary mixes of airlift aircraft. We also recommended that a complete affordability assessment be performed in support of the recommended program review as well as other key documents prepared, such as an operational test and evaluation report and independent cost estimate. We further recommended that the Secretary of the Air Force assess the C-141 service life extension program as a means to reduce long term airlift costs, and defer retirement of any operationally capable C-141 aircraft. Given the cost, schedule, and technical uncertainties presently surrounding the C-17 Aircraft Program, I believe the recommendations contained in this report and directed by Congress provide a sound process for making decisions on the future direction of the C-17 Program. The Under Secretary of Defense for Acquisition has scheduled a Defense Acquisition Board program review for August 1993, and we will examine the documentation submitted by the Air Force as part of our continuing audits of the Defense Acquisition Board review process.

ACCOUNTING CHANGES FOR C-17 SUSTAINING ENGINEERING COSTS

As mentioned previously, in February 1992 we issued our final report "Audit of Contractor Accounting Practice Changes for C-17 Engineering Costs." Briefly, we concluded that engineering costs were improperly redefined as sustaining engineering and charged to production accounts in order to continue to make progress payments to the contractor. On August 3, 1992, the Secretary of the Air Force directed that an investigation be

conducted into potential violation of the Anti-Deficiency Act based on our audit recommendations. On February 5, 1993, I wrote to the Acting Secretary of the Air Force noting that engineering costs continued to be inappropriately charged by the contractor, and requested that the investigation be expedited and address the cumulative impact of the improper cost allocations, not just the retroactive impact prior to October 1990. Additionally, I stated the Air Force investigation should affix personal accountability for any violations of law and recommend appropriate penalties. Finally, I emphasized that the Air Force should take immediate action to stop the continued improper charging of development costs to production lots in apparent violation of appropriations law.

On March 1, 1993, the Acting Secretary of the Air Force advised me that he had directed the investigation of Anti-Deficiency Act violations be expanded to cover both the retroactive and prospective impacts of the cost charging practices. Additionally, the Acting Secretary indicated that the Air Force was pursuing a negotiated resolution with the contractor to implement a fair and reasonable allocation methodology. Finally, the Acting Secretary informed us that the Defense Plant Representative Office had adjusted contractor progress payments to minimize the potential for further violations until final resolution of the cost allocation issues with the contractor, and stated the Air Force is committed to a full, fair investigation and complete reporting of findings and

corrective actions. We understand the lack of agreement on the allocation methodology is impeding negotiations for further C-17 production contracts. Copies of the February 5 letter and the Air Force response are attached to this statement.

We will thoroughly review the results of the Air Force investigation of C-17 Anti-Deficiency Act violations when they become available.

REVIEW OF C-17 WING STRUCTURAL INTEGRITY

On October 1, 1992, both wings on the C-17 Static Test Vehicle failed during a structural test. The wings failed at approximately 128 percent of the limit load for a severe test condition. The requirement was 150 percent. Both wings buckled rear to front, cordwise, with 25 to 50 percent skin fracture. Additionally there were extensive structural failures in stringers, spars, and ribs.

On October 5, 1992, you asked us to examine the failure and the recommended solution to ensure the structural integrity of the aircraft.

The Douglas Aircraft Company formed two teams, a design and test team and an independent review team, to analyze the failure and recommend corrective action. The Air Force Program Executive Officer formed an executive review team to evaluate the

completeness and adequacy of the failure investigations and corrective action plans. Additionally, another Air Force team was assigned to review proposed wing modification issues such as corrosion and critical processes.

The root cause analysis identified three major contributors to the failure: a computational design error, optimistic design assumptions, and test loads placement.

We have reviewed the root cause analysis with Douglas design engineers, Air Force engineers, the various review teams, and Air Force program management officials. We have found the analysis to be accurate and complete to date. Our next step, following Air Force decisions on which options to select, will be to review the Static Test Vehicle repair option selected and the validation of the modified wing design option selected. We plan to assess the extent to which the Static Test Vehicle wing option selected will result in a test wing representative of production wings. We will review the validation of the modified wing design with corrected design and analysis procedures. We also plan to review the possibility of corrosion from dissimilar metals used in the wing repair and reinforcement.

SUMMARY

In summary, Mr. Chairman, we have reported on a number of serious and disturbing management problems in the C-17 aircraft

program. We have sought, in our recommendations, both to affix accountability for past failings by Government officials and to help avoid such problems in the future.

This concludes my statement. We will attempt to answer any questions you might have.

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-2884

FEB 5 1993

MEMORANDUM FOR ACTING SECRETARY OF THE AIR FORCE

SUBJECT: Investigation of Anti-Deficiency Act Violation in the C-17 Aircraft Program

On August 3, 1992, the Secretary of the Air Force directed that an Anti-Deficiency Act violation investigation be conducted into the allocation of engineering costs on the C-17 program. We recommended such an investigation six months earlier in our Audit Report Number 92-046, "Audit of Contractor Accounting Practice Changes for C-17 Engineering Costs," dated February 13, 1992. Our report also raised the issue of the prospective impact of the allocation methodology approved by the Air Force. We subsequently reported to you on January 14, 1993 in our report "Government Actions Concerning McDonnell Douglas Corporation Financial Condition During 1990" that charging 100 percent of sustaining engineering costs to production lots was inappropriate and not supportable.

On January 19, 1993, the Defense Contract Audit Agency (DCAA) reported (Audit Report Number 4461-92B17900046-S3) that sustaining engineering costs continued to be misallocated by the contractor with both significant adjustments to previous billings being made by the Defense Plant Representative Office at Douglas Aircraft Company and further adjustments required. The improper allocation of costs is a direct result of the implementation of the accounting practices addressed in our reports and constitutes continuing violations of 31 U.S.C. 1301 and 31 U.S.C. 1517, and potentially 31 U.S.C. 1341. The DCAA reported over $57.3 million was solely allocable to development although improperly charged to production and another $383.5 million charged to production was in question through December 1992. The report also indicated that additional nonrecurring costs are being inappropriately charged to production each month.

My understanding is that the Air Force Anti-Deficiency Act violation investigation is not yet completed and will address only the retroactive impact from November 1988 to October 1990 of the accounting changes. Given the dollar magnitude of the potential statutory violations, I request that your investigation be expedited and address the cumulative impact of the improper cost allocations approved in October 1990 through to the present time. Additionally, the Air Force investigation should affix personal accountability for any violations of law and recommend appropriate penalties. I do not believe it is prudent to separate the retroactive and prospective impact of the accounting changes into separate investigations and, therefore, consider

expansion of the ongoing investigation to be essential. Should the Air Force decline to expand the investigation to address the total impact of the accounting changes and individual accountability, we will be compelled to elevate the matter to the Secretary of Defense and ensure that either this office or the Office of the Secretary of Defense investigates the potential Anti-Deficiency Act violations of the scope described.

Additionally, the Air Force should immediately take action to stop the continued improper charging of development costs to production lots in apparent violation of appropriation law. I request you provide this office no later than March 1, 1993, the actions you have taken to curtail the improper charges and complete the Anti-Deficiency Act violation investigation.

Derek J. Vander Schaaf
Deputy Inspector General

Copy to:

Under Secretary of Defense for Acquisition
Comptroller of the Department of Defense
General Counsel, Department of Defense
Director, Defense Contract Audit Agency
Director, Defense Finance and Accounting Service
Commander, Defense Contract Management Command

SECRETARY OF THE AIR FORCE
WASHINGTON

MAR 1 1993

MEMORANDUM FOR THE DEPUTY INSPECTOR GENERAL
DEPARTMENT OF DEFENSE

SUBJECT Investigation of Anti-Deficiency Act Violation in the C-17 Aircraft Program - INFORMATION MEMORANDUM

This responds to your 5 February 1993 memorandum.

The Air Force has been engaged in an investigation of potential Anti-Deficiency Act violations covering contractor allocation of C-17 nonrecurring engineering costs for the period from November 1988 to October 1990. Based on the 19 January 93 DCAA Audit report, and consistent with Air Force Regulation 177-16, I have directed an expansion of that investigation to cover charges incurred from November 1990 through December 1992.

Concurrently, we are pursuing a negotiated resolution to implement a fair and reasonable allocation methodology for nonrecurring and recurring costs on C-17 contracts. This requires a team effort by the C-17 System Program Office, the Defense Plant Representative Office (DPRO), and the Defense Contract Audit Agency. In addition, the DPRO has taken action, through appropriate adjustments to progress payments, to minimize the potential for violations as we proceed to final resolution of cost allocation issues between the Government and the contractor.

The Air Force is committed to a final and satisfactory resolution of the C-17 cost allocation issues, a full and fair investigation, and complete reporting of findings and corrective actions.

Michael B. Donley
Acting Secretary of the Air Force

Mr. CONYERS. The committee is honored to have Senator Charles Grassley of Iowa, a distinguished member of the Armed Services Committee here at the podium with us.

Senator Grassley, do you have a statement to make or do you have questions or both?

Mr. GRASSLEY. I have both, but I am well aware of comity between the House and Senate, and I presumed that I was going to be the last on the schedule. If you want me to go ahead with my questions, I would be glad to do that and would be honored to do that.

Mr. CONYERS. Does your time permit, Senator, for us to question Mr. Vander Schaaf or would you want to go in front of him?

Mr. GRASSLEY. I can be here until 12 o'clock.

Mr. CONYERS. Well, I would like to do this to accommodate Senator Grassley. I would like us to hold all questions to Mr. Vander Schaaf and allow the Senator to go forward. We appreciate him coming over and we are happy to hear him at this time.

I would like you to take your position at the witness stand, Senator, if you will.

Mr. GRASSLEY. You want me to go down in front?

Mr. CONYERS. Yes, down in front.

STATEMENT OF HON. CHARLES E. GRASSLEY, A SENATOR IN CONGRESS FROM THE STATE OF IOWA

Mr. GRASSLEY. Thank you, Mr. Chairman. I also remember the fine time that you and I had between 1974 and 1980 serving together in the House and working on many very important things, and I thank you very much for your courtesy in letting me participate.

I also want to thank the ranking Republican, Mr. McCandless for allowing me to participate in this hearing as well. Your hearing is so important because it is about what I consider the total breakdown of discipline and integrity in the DOD procurement process. It is about fixing responsibility for wrongdoing and accountability.

I am here for two reasons. First, I want to offer moral support in this effort; and second, I will, if it isn't appropriate at this time, I will leave some questions that I was going to ask Mr. Vander Schaaf. If there is an opportunity for me to do that, I would like to do that as well, but I will leave that at your discretion.

I will at least give Mr. Vander Schaaf an opportunity to know at the end of my statement the questions that I have, and presumably considering the depth of your investigation and your concern, Mr. Chairman, I would say you would probably have some of the same questions, as well.

Of course, I think I should make it clear that I don't think I or anybody on this committee comes here to sabotage the C–17 program, because I think there is a general agreement that we need to modernize our fleet of transport aircraft. But if we stay on the present course, I don't think there is going to be any C–17. I think the C–17 will self-destruct under dishonest management.

You, Mr. Chairman, and your able assistant, Eric Thorson, with the help of the DOD inspector general together I think have done a superb piece of work in examining the financial mismanagement of the C–17 program, and I think you should be complimented by

my saying and I hope what is a general agreement that this is oversight and investigation and at its very best.

I think it is also representative of the process of government working. I don't think you are here or I am here in any way to take on a particular industry or to take on a particular program, but there are certain processes of government that Mr. Vander Schaaf has been involved in, and we want to make sure that his recommendations for improvement are carried out in every respect.

That again is oversight responsibilities more so than a point of substance about a particular industry or a particular weapon system. You, of course, have provided leadership and direction and the Department of Defense inspector general has done a thorough investigation, and I think as has been presented here, you can see that it is a real team effort.

The current phase of the C–17 review culminated in January 1993 with publication of a report referred to this morning. I think it is a devastating report. It suggests a total disregard for the laws that govern the use of the taxpayers' money.

What we have uncovered here, I believe, is an emerging $1.5 billion cost overrun on a fixed-price contract. The contractor is threatened with major financial losses. To soften the blow, senior Air Force officials appear to have devised various schemes to cover up mounting schedule delays and burgeoning cost overruns in order to maintain an uninterrupted flow of money to the company. This was a backdoor bailout operation, I believe.

When all R&D money was exhausted and there was still $235 million outstanding of R&D bills to pay these officials arbitrarily shifted the cost overrun to the production contract, where there was plenty of extra cash. This may have violated several statutes, including the Anti-Deficiency Act.

I think the inspector general referred to that. I think they continued to make progress payments that were not commensurate with the work performed and I think that this is a potential violation of 10 U.S.C. 2307.

The alleged illegal progress payments totaled $350 million according to the inspector general. The facts in the case have been thoroughly documented and verified in the DOD inspector general report.

The investigation is complete. The DOD inspector general has recommended that appropriate disciplinary action be taken against five senior Air Force officials who are named in his report. One of the military officers recommended for disciplinary action is Brigadier General Nauseef.

As difficult as it is to comprehend, this general's nomination for promotion to the rank of major general was submitted to the Senate for approval January 20, 1993, after the inspector general's report was issued.

It is probably rhetorical because I am not sure the people here can answer it, but how can we be talking about General Nauseef's promotion when disciplinary action is called for? To me, this defies all reason and understanding. So in a letter to the chairman of the Senate Armed Services Committee on February 16, I formally requested that this general's promotion be denied based upon the contents of the DOD inspector general's report.

The nature and scope of the wrongdoing by senior Air Force officials has been partially defined. Responsibility has been fixed. It is a time to hold those persons accountable for what happened. This, in my judgment, is no time to back off, no time for weak knees. Above all, I advocate accountability to the full extent that is justified by the facts presented in the inspector general report, and it is on this point, accountability, where I have concerns.

I would say to Mr. Vander Schaaf that I have concluded that the findings and recommendations presented in his report may not be fully consistent with the facts presented in the report. The facts presented in the report suggest that misconduct may be far more serious than has been indicated. These facts suggest that Federal criminal laws may have been violated, and if so, those must be, according to the law, expeditiously reported to the Attorney General as required by the Inspector General's Act of 1978.

I raised this issue with the inspector general in a letter dated February 16 of this year. His reply to me came back on March 1 and the reply is quite frankly very disappointing, Mr. Chairman, and also to Mr. Vander Schaaf, who is here. I feel like the inspector general might be trying to dodge the issue. I feel like he is trying to take cover behind the Air Force reinvestigation of the inspector general's investigation.

The reinvestigation is ongoing and is to be completed by April 13. I fear that the reinvestigation is really nothing more than a Pentagon damage limitation operation to discredit Mr. Vander Schaaf's otherwise very good report and to save the careers of some people in the military.

My questions that I would ask to Mr. Vander Schaaf pertain only to the facts presented in the printed report. My questions have nothing to do with the reinvestigation. They are really questions that are restated in my February 16 letter, and I think if there are answers to my questions that were in that letter based just on the information in the report, the letter that I received in response would have been more firm, more responsive, and more definite.

I hope that the inspector general still stands 100 percent behind all the facts that are in the report. In a sense, I asked that of the very respected inspector general. There is an aspect of some false statements with regard to the report clearly indicating that General Butchko, the program director and possibly others, knowingly made false and misleading statements to cover up the cost overruns and schedule delays in order to keep the money flowing to the contractor.

Did General Butchko or any of the others violate 18 U.S.C. 1001 or article 107 of the Uniform Code of Military Justice? If so, has the inspector general reported this matter to the Attorney General as required by the Inspector General's Act of 1978?

It seems to me that we in our constitutional oversight responsibilities have a right to know that when the facts are pretty plain that when the law has been violated, that the Inspector General's Act should be followed. I think it is our way of demanding accountability.

We can't have weakness in this area. If you signal weakness in this area, you are going to encourage further disregard of the law in the future.

None of us are going to dispute Mr. Vander Schaaf's qualifications and the good job that he does. I consider him a friend. I consider him a very good public servant, and I think maybe to some extent considering his report and the reinvestigation, that to some extent he might be caught in the middle between people in the defense industry and people in DOD.

I am not going to let him get caught in the middle. I hope he doesn't want to get caught in the middle. The retroactive accounting practices changes known as the "Journal Voucher Transfer" described in the report matches perfectly with the scenario described on page 10 of the cost mischarging section of indicators of fraud in DOD procurement. That is a document that was published by Mr. Vander Schaaf's office in 1987.

The scenario describes precisely what happened on the C–17 contracts. So, has fraud been committed on any of the C–17 contracts? If so, this demands that proper action be taken.

The report states that Generals Butchko, Nauseef, and others "acted in concert to develop and implement a plan which was based on false and misleading information."

The words "false and misleading" are from the report; and deception, also from the report, to make illegal payments to the contractor.

Did these officials engage in a conspiracy and violate 18 U.S.C. 371 and article 81 of the Code of Military Justice? If so, then the law is pretty clear what the inspector general must do.

Is the contractor's performance deficient in any respect against C–17 contractual requirements? If the contractor is in default, what steps have been taken to protect the government's interest?

I think bottom line as you look at people expressing their will in the last election and the responsibility of public officials to respond to that—both those of us elected as well as those who aren't—I think that we saw a message for change, a message to make government work, in the words of the President, kind of the reinventing of government, and I think I see too much in the C–17 of business as usual.

I think that is what this hearing is about, to make sure that business as usual is no longer the name of the game; that we are really making a big difference.

I thank you very much.

Mr. CONYERS. We are indebted to you, Senator Grassley, for your very timely intervention. We welcome it.

[The prepared statement of Mr. Grassley follows:]

STATEMENT OF

SENATOR CHARLES E. GRASSLEY

BEFORE THE

SUBCOMMITTEE ON LEGISLATION AND NATIONAL SECURITY

OF THE

COMMITTEE ON GOVERNMENT OPERATIONS

MARCH 17, 1993

Mr. Chairman, I want to thank you and the Ranking Republican, Mr. McCandless, for allowing me to participate in this important hearing.

Your hearing is so important because it is about the total breakdown of discipline and integrity in the DOD procurement process. It is about fixing responsibility for wrongdoing and accountability.

I am here for two reasons. First, to offer moral support and secondly to ask a few questions about the IG report.

I did not come here to sabotage the C-17. We need to modernize our fleet of transport aircraft, but if we stay on the present course, there will be no C-17. The C-17 will self-destruct under dishonest management.

You, Mr. Chairman, and your able assistant, Mr. Eric Thorson, with the help of the Department of Defense (DOD) Deputy Inspector General (IG), Mr. Derek Vander Schaaf - together - have done a superb piece of work examining financial mismanagement of the C-17 program. This is oversight and investigation at its best.

You have provided leadership and direction, and the DOD IG has done a thorough investigation - a real team effort.

The current phase of the C-17 review culminated in January 1993 with the publication of the IG's report "Government Actions Concerning McDonnell Douglas Corporation Financial Condition During 1990."

This is a devastating report. It suggests a total disregard for the laws that govern the use of the taxpayers' money.

What we have uncovered here, Mr. Chairman, is an emerging $1.5 billion cost overrun on a fixed-price contract. The contractor, McDonnell Douglas, is threatened with major financial losses. To soften the blow, senior Air Force officials appear to have devised various schemes to cover up mounting schedule delays and a burgeoning cost overrun in order to maintain an uninterrupted flow of money to the company. This was a "backdoor" bailout operation.

When all R&D money was exhausted and there were still $235 million in outstanding R&D bills to pay, these officials arbitrarily shifted the cost overrun to the production contract where there was plenty of extra cash. This may have violated several statutes including the Anti-deficiency act. And they continued to make progress payments that were not commensurate with the work performed - a potential violation of 10 USC 2307.

The alleged illegal progress payments totaled $350 million, according to the IG.

The facts in the case have been carefully and thoroughly documented and verified in the DOD IG's report. The investigation is complete. The DOD IG has recommended that "appropriate disciplinary action" be taken against five senior Air Force officials, who are named in his report.

One of the military officers recommended for disciplinary action is Brigadier General John M. Nauseef. As difficult as it is to comprehend, Mr. Chairman, General Nauseef's nomination for promotion to the rank of major general was submitted to the Senate for approval on January 20, 1993 - AFTER the IG's report was issued. How can we be talking about General Nauseef's promotion when disciplinary action is called for? This defies reason and understanding.

In a letter to the Chairman of the Armed Services Committee on February 16th, I formally requested that General Nauseef's promotion be denied based on the contents of the DOD IG's report.

The nature and scope of wrongdoing by senior Air Force officials has been partially defined. Responsibility has been fixed. It's time to hold those persons accountable for what happened.

This is no time to back off. This is no time for weak knees.

Above all, I advocate accountability to the full extent that is justified by the facts presented in the IG's report. It is on this point - accountability - where I have concerns.

Mr. Vander Schaaf, I have concluded that the findings and recommendations presented in your report may not be fully consistent with the facts presented in your report.

The facts presented in your report suggest that the misconduct may be far more serious than you have indicated.

Those facts suggest that federal criminal laws may have been violated and, if so, those must be "expeditiously reported" to the Attorney General as required by the Inspector General Act of 1978.

I raised this issue with you in a letter dated February 16, 1993. Your reply is dated March 1st. Your reply is somewhat disappointing.

Mr. Vander Schaaf, I feel like you are trying to dodge the issue. I feel like you are trying to take cover behind the Air Force re-investigation of your investigation.

The re-investigation is ongoing and is to be completed by April 13th. I fear the re-investigtion is nothing more than a Pentagon damage-limitation operation to discredit your report and save the careers of three generals.

My questions to you pertain only to the facts presented in your printed report. My questions have nothing to do with the re-investigation.

I will restate the questions as posed in my letter to you dated February 16th. Please answer them based on the information in your report.

Questions

General

Do you still stand behind all the facts in your report 100 percent?

False Statements

Your report clearly indicates that General Butchko, the program director, and possibly others knowingly made "false" and "misleading" statements to coverup the cost overrun and schedule delays in order to keep the money flowing to McDonnell Douglas.

Did General Butchko or any of the others violate 18 USC 1001 or Article 107 of the Uniform Code of Military Justice (10 USC 907)? If so, have you reported this matter to the Attorney General as required by the Inspector General Act of 1978?

Fraud

The retroactive accounting practice change - also known as the "journal voucher transfer" - described in your report matches perfectly with a scenario described on page 10 in the Cost Mischarging section of "Indicators of Fraud in DOD Procurement" - a document published by your office in 1987.

The scenario describes precisely what happend on the C-17 contracts. Has fraud been committed on any of the C-17 contracts?

Conspiracy

Your report states the General Butchko, Nauseef, and others "acted in concert" to develop and implement a plan, which was based on "false" and "misleadidng" information and "deception," to make illegal payments to McDonnell Douglas. Did these officials engage in a conspiracy and violate 18 USC 371 and Article 81 of the Uniform Code of Military Justice (10 USC 881)?

Default

Is McDonnell Douglas' performance deficient in any respect against C-17 contractual requirements? If the contractor is in default, what steps have been taken to protect the government's interests?

Mr. CONYERS. The questions will be included in the record and we will ask Mr. Vander Schaaf to respond to them in writing.

[The questions follow:]

Senator Grassley: Your report clearly indicates that General Butchko and others repeatedly made false and misleading statements to cover-up the cost overruns on the C-17 R&D contract and delays on the production contracts in order to keep the progress payments flowing and reduce contractor losses. You repeatedly state that they "knew" this information was false and misleading. For example, you state (on page 25) that there actions "represent an intentional plan to award the Lot III contract based on false information and improper cost charging practices." Since you report that General Butchko and others knowingly made false and misleading statements to cover up a material fact, I presume that you will cite them for violations of 18 USC 1001 or the companion provision in the Uniform Code of Military Justice, Article 107 of Section 907. When do you intend to do that?

Mr. Vander Schaaf: Our inquiry was conducted as an administrative review. The information developed about the improper actions of the individuals involved has been provided to the Air Force. The Air Force was tasked by the Secretary of Defense to provide any additional pertinent information and to respond to our recommendations for disciplinary action. This information will be considered, together with the matters given in testimony at the hearing on March 17 by Mr. Jenne. Based on that testimony, we have initiated a criminal investigation, and these matters, together with any additional data that may be developed, will be considered to determine what future action may be appropriate. Additionally, this committee has already referred the matter to the Department of Justice. Therefore, consideration of whether there have been violations of the Uniform Code of Military Justice or Federal law currently rests with the Air Force or the Department of Justice, respectively.

Senator Grassley: Your report seems to indicate that the contractor, with the assistance of Air Force officials, committed fraud against the Government, using a retroactive accounting practice change. Yet you never raise the possibility that fraud was committed.

By October 1, 1990, you report, the contractor had a progress payment request against the R&D portion of the contract totaling $235 million, but the Air Force had no R&D money to pay the bill. All R&D funds had been expended. To remedy the overobligation, the Air Force and the contractor devised a scheme involving retroactive accounting adjustments. Toward this end, at least $127 million, which had been charged to the development portion of the contract, was arbitrarily shifted to the production contract. While costs were moved from R&D to production, associated budget or work was not. "In essence," you conclude, "only the overrun on FSED (R&D) was shifted to production." As you know, this procedure violated several statutes, yet it remains in effect today with the value of work illegally shifted to production contracts now totaling $470 million.

The similarity between the C-17 accounting practice change described above and a situation described in "Indicators of Fraud in DoD Procurement"--a document published by your office in 1987--is striking. It is a perfect match. The section on "Cost Mischarging" reads, in part, as follows: "Moving costs from a Government job which is tight on budget to one which is 'fat' could prevent an overrun in the case of the former and thus make the contractor appear more efficient than he actually is. This could result in awarding incentive fees or follow on contracts which would not be appropriate were the true cost known." This is exactly what happened on the C-17 contract. If this is indeed the case, does the C-17 accounting practice change constitute fraud?

Mr. Vander Schaaf: We believe that the accounting practice change may have resulted in an Anti-Deficiency Act violation. The Air Force is currently investigating the potential Anti-Deficiency Act violation and we are awaiting the results of their investigation.

Senator Grassley: You state that Generals Butchko, Nauseef, and others "acted in concert" to develop and implement a plan, which was based on false and misleading information and deception, to make illegal payments to McDonnell Douglas. This sounds like a conspiracy and a violation of 18 USC 371. Did Generals Butchko and Nauseef and the others cited in you report engage in a conspiracy?

Mr. Vander Schaaf: We reserve comment on this matter because of ongoing inquiries.

Senator Grassley: Is McDonnell Douglas' performance deficient in any respect against C-17 contractual requirements? If so, the contractor is in default, and if that is the case, then what steps have been taken to protect the Government's interests?

Mr. Vander Schaaf: Our review did not focus on Douglas performance against contractual requirements. We have no basis for commenting on whether the contractor is in default.

Mr. CONYERS. Mr. Vander Schaaf, if you choose to respond to any portion of these questions at this time, you may.

Mr. VANDER SCHAAF. I think it is essential I respond to those now. I am fully prepared to respond to those questions.

This question of criminality came up late during our review. We began this inquiry strictly as an administrative matter to review and determine whether McDonnell Douglas was receiving greater progress payments than they should have and if so why were these payments being made.

We discovered that several individuals engaged in highly improper activities to ensure greater cash-flow to McDonnell Douglas and they completely disregarded the procurement regulations. I find their behavior inappropriate and offensive. I believe they exhibited incredibly bad judgment in their zeal to protect the program. That was a goal shared by the Air Force as an institution.

When we put this report together in December, I was working on these facts with the staff here at the table. We had some decisions to make with respect to what we did with this thing at that point in time. I wasn't sure the Air Force officials actions rose to the level of criminality under chapter 18 of the United States Code. In addition, three of the individuals are subject to the Uniform Code of Military Justice. So you still have the potential for UCMJ action which would have to be taken by the Air Force.

I also considered carefully the ramifications of the Anti-Deficiency Act violations. The Air Force violated 31 U.S.C. 1341 which prohibits spending more than has been appropriated; 31 U.S.C. 1517, dealing with administrative controls within an appropriation; and 31 U.S.C. 1301 which deals with spending money only for the purposes for which it was appropriated.

We have a situation here where the Air Force needs to deal forthrightly with the problem, as I see it at this point. Maybe as a result of this new process ongoing, Senator Grassley, and this new review, the Air Force will look at its own good, its welfare and its needs and will sever itself from those individuals whose actions we contest in this report.

I don't know how the Air Force review will come out. Based on the initial Air Force reaction to our report, I had the very same concerns you had. They wanted an "independent" review and they were going to hire an outside counsel, a law firm in Washington, without any prior competition or any determination whether the law firm had conflicts of interest.

It looked to me like it was a setup to build a big defense case from day one for these people rather than to look at the facts that we had uncovered in doing the investigation.

I am sensitive to your comments. I guess my response to you in your letter was not as good as it could have been, but I am determined to wait this thing out and see what Air Force officials come up with as they conduct their own review. They can do almost all of it using our files and records, which they have had full access to.

That is generally my comment.

Mr. GRASSLEY. You have that discretion under the 1978 act to wait.

Mr. VANDER SCHAAF. I think it is incumbent also to explain that without some Air Force support in this matter, it is going to be very difficult for the U.S. attorney or the Justice Department to deal with it. That is not necessarily my decision.

The Air Force also has the option to deal with this matter solely on their own under the Uniform Code. The matter isn't closed.

I believe the committee also referred the matter to the Department of Justice when we gave the report to the committee; is that correct, Mr. Chairman?

Mr. CONYERS. You are absolutely right.

Mr. VANDER SCHAAF. So it is in that arena at this point.

Mr. CONYERS. The Chair recognizes Mr. McCandless.

Mr. MCCANDLESS. Thank you, Mr. Chairman.

Are you planning to exercise the 5-minute rule?

Mr. CONYERS. Do you want me to exercise the 5-minute rule?

Mr. MCCANDLESS. I need to plan my approach, plan my work and work my plan.

Mr. CONYERS. I do not plan to exercise the 5-minute rule.

Mr. MCCANDLESS. Thank you, Mr. Chairman.

What I am going to do is what I think is essential in the way of building blocks. I am neither pro nor con either side, but to understand this information it is necessary for me to ask questions that will give me then a clear indication of the position that you have as a result of your investigation.

With that, let me ask the first question.

It is my understanding that the contractual agreement between the Federal Government and the McDonnell Douglas Corp. does not differentiate between R&D and the amount of money necessary to produce the first test model.

Is that correct?

Mr. VANDER SCHAAF. That is not correct. The contract differentiates; however, there is a single overall contract ceiling. Legal opinions have been rendered by the Department that there is still a requirement to segregate the RDT&E nonrecurring engineering costs for this item from the acquisition and production costs that are involved.

Maybe Mr. Rau can add something.

Mr. RAU. The contract does call for a separation, as Mr. Vander Schaaf stated, and that is done through various vehicles.

The progress payments submitted by the contractor to the government must be separated by the type of costs incurred, in essence by appropriation.

Mr. MCCANDLESS. Then it is your position that to commingle these funds would be in violation of the contract as currently written?

Mr. VANDER SCHAAF. Yes, commingling costs causes us to spend those funds for purposes other than those for which they were appropriated. There are rules with respect to how you spend RDT&E funds and how you spend procurement funds.

Mr. MCCANDLESS. That is a point in your report that you make.

Mr. VANDER SCHAAF. They obviously understood those rules or they wouldn't have gone back and done a retroactive accounting change where they, by definition, decided that we are going to use

90 percent drawing release as the point at which we switch from nonrecurring engineering to recurring.

If I could go into this, that is so descriptive—they knew they couldn't simply say this is one contract, we can use any kind of money we want. I could get into details of how they did that.

Mr. MCCANDLESS. The basic question has been answered. It is their contention that there is not a distinguishing difference between the two.

Mr. VANDER SCHAAF. That is flat wrong. Even the Air Force wouldn't back that up.

Mr. MCCANDLESS. Second, for purposes again of setting the necessary building block, irrespective of how all of the dollars have or have not been spent, illegally, whatever you wish to place on the table as being improper, has the Air Force paid McDonnell Douglas more than the $6.7 billion that was part of the original agreement?

Mr. VANDER SCHAAF. Not to this point; no, sir.

Mr. MCCANDLESS. OK.

Mr. VANDER SCHAAF. The original agreement was $6.5 billion, but it has grown to a little over $6.7 billion today.

Mr. MCCANDLESS. For purposes of the record, my information is that the base contract No. 2108 is a $6.7 billion fixed-price contract for research and development, one static test article, one durability test article, and one test plane [T–1].

Is my information correct?

Mr. RAU. Would you read that once more?

Mr. MCCANDLESS. The C–17 base contract, 2108, is a $6.7 billion fixed-price contract for research and development, one static test article, one durability test article, one test plain and the first six production planes.

Mr. RAU. Yes. You didn't mention the first six production articles in your initial question, sir.

Mr. MCCANDLESS. So where are we now in the completion of this, separate from the possibly that the planes don't perform according to design or according to production shortcomings? Where are we in terms of producing what is necessary to comply with this contract?

Mr. VANDER SCHAAF. I am not sure in what sense. Even though——

Mr. MCCANDLESS. Do we have the first six production planes?

Mr. VANDER SCHAAF. No.

Mr. MCCANDLESS. How many of those do we have?

Mr. VANDER SCHAAF. Four, I believe.

Mr. MCCANDLESS. When is it estimated that the next two will be completed?

Mr. VANDER SCHAAF. I believe one is due to be delivered any time. It keeps getting postponed. I don't have the exact dates.

The other one is due a couple of months after that. Whether it will make it or not, I don't know.

Mr. MCCANDLESS. In terms of a time line, does your original contract state that certain parts of this contract delivery line have a fixed date to them?

Mr. VANDER SCHAAF. Most certainly. Under the contract, the first flight was supposed to occur back on August 9, 1990. First flight didn't occur until September 15, 1991.

Mr. MCCANDLESS. What time in the contract was the section, the contract 2108 to be completed with the production planes?

Mr. VANDER SCHAAF. This was renegotiated. Part of the problem that I have been discussing this morning——

Mr. MCCANDLESS. I am talking about 2108.

Mr. VANDER SCHAAF. That was renegotiated.

Mr. MCCANDLESS. I want the original date.

Mr. VANDER SCHAAF. We will get it for you. I think we have it here.

Mr. RAU. Just a moment.

Mr. VANDER SCHAAF. We will let him look it up and go ahead to the next question. It was some time, if I recall, about a year later than the first flight, which was August 1990.

Mr. MCCANDLESS. I don't want to take all the time here. This is a technical thing because I have a certain mechanical background and I found this interesting relative to rivets. I travel extensively back and forth from the east to the west coast on DC–10's and MD–80's.

I am wondering if the rivets are going to pop in some of these airplanes that are made by McDonnell Douglas because of what you consider to be the shortcoming in the rivets in this plane, why would there be a difference in the technology in those types of produced planes and what we are talking about here to the degree that the issue has been made out of it.

Mr. VANDER SCHAAF. I haven't made any issue with respect to commercial aircraft.

Mr. MCCANDLESS. I am talking about the basic riveting procedure. Why is it different?

Mr. VANDER SCHAAF. I am not sure the procedure was different. The quality control wasn't there.

Mr. MCCANDLESS. It was quality control then?

Mr. VANDER SCHAAF. Yes. Basically you are talking about a quality control problem.

Mr. MCCANDLESS. Again this is a little technical, so bear with me—you talk in your statement about a tolerance of if I am reading the decimals correctly one hundredth to two hundredths of an inch.

Mr. VANDER SCHAAF. Our report put it in thousandths of an inch, I am talking about overexpansion when they get expansions more than ten thousandths of an inch.

Mr. MCCANDLESS. You have 0.010 to 0.020 in your testimony. Isn't that hundredths of a inch?

Mr. VANDER SCHAAF. Thousandths of an inch.

Mr. STAVENJORD. Ten thousandths is a hundredth of an inch.

Mr. MCCANDLESS. Somewhere along the line my math has gotten fouled up. It is on page 2 of your testimony, isn't it? Under recommendations on page 3—I am sorry, in parentheses on the third line of the paragraph headed recommendations.

Mr. VANDER SCHAAF. That is right.

Mr. MCCANDLESS. What is that meant to mean?

Mr. VANDER SCHAAF. One hundredth of an inch to two one hundredths of an inch.

Mr. MCCANDLESS. So if we drilled a hole and took the rivet in question and we dropped it into the hole prior to doing anything

with it, there would be from one hundredth to two hundredths of an inch variation between the inside wall of the hole and the diameter or circumference of the rivet?

Mr. VANDER SCHAAF. No. There should be almost a perfect fit. The 0.010 to 0.020 figures refer to overexpansion caused when the rivets are installed.

Mr. MCCANDLESS. We haven't done anything to it yet.

Mr. VANDER SCHAAF. I am not referring to the preexpanded state at all here.

Mr. MCCANDLESS. You are talking about the rivet expansion once it has been pressed?

Mr. STAVENJORD. Yes. Expansion beyond the diameter of the hole that was drilled.

Mr. MCCANDLESS. I guess where I am coming from is so many thousands of planes have been built using all kinds of rivets, using all kind of metals, the fasteners have been pressed rivets.

When we talk in terms of commercial, whether it is Boeing or we talk about Lockheed or we talk about McDonnell Douglas, it is not some new engineering feat to put a rivet in a hole and expand it. Yet this seems to be a big thing here relative to the production quality of this plane.

I need a little explanation as to why such a simple action has become such a big deal.

Mr. VANDER SCHAAF. Let me start and Mr. Stavenjord can carry this on.

Douglas Aircraft used a somewhat new methodology, a drivematic tool that was supposed to speed up the process and so forth.

This committee held hearings in November 1991, I believe, based upon two witnesses from the corporation that had come forward to describe poor quality controls and other problems regarding the manufacture of those wings to include a lot of difficulties with rivets.

At that time we, along with the Federal Bureau of Investigation, were conducting a criminal investigation with respect to those matters. People made some statements that were very questionable about the quality of these wings and what was going on. So we finished that up.

The committee held these hearings and the allegation was that these rivets were not being expanded enough to get the full integrity, the maximum strength that you want. They had to be expanded at least one one-thousandth of an inch.

According to these people, they were not always getting that minimum expansion. For some reason the coupons were missing. The coupons document the test run that they make before they start and when they end. They use these metal coupons and plug rivets in them to make sure they get the right tensions, the right expansion.

Mr. MCCANDLESS. Equivalent to a test strip.

Mr. VANDER SCHAAF. Yes. They then cut those coupons open, the engineers look at it and they document on a coupon data sheet what they saw and what happened so they know what they are dealing with. All this material disappeared during the criminal investigation process. It was gone. So we finished up inconclusively

with the criminal matter and I am not sure the committee investigative staff has finished entirely, but we finished up with that and instead sent the technical team from the audit organization, our engineering people, to look at whether the quality assurance process for riveting was satisfactory.

They found some of the coupon data sheets. They didn't find the original metal coupons themselves, but they found the coupon data sheets. They began to look at those and looked particularly for No. 12 slugs, three-eighths inch slugs of a certain type, and said my golly, we are getting expansions here much higher than the maximum allowed by other processing standards. I can't get into proprietary data, but the details are in our report.

Those expansions were quite unexpected by everyone, Mr. McCandless. We said, "Wait a minute. Isn't this a bit of a problem here? Show us that you have tested metals of this type expanded to those distances and amounts."

We still have not been able to find evidence of such tests, and we are concerned that overexpansion can lead to stress fractures, cracking and corrosion problems down the road, long after the warranties on the airplanes are gone. The C–17 warranty is based upon the durability test aircraft, and we got the coupon test data sheets for it, and the same expansions have not occurred on that particular ship.

I think the riveting machine operators were having problems; they got pressure because they weren't getting enough expansion. Probably what happened is people said, "Gee, we are not getting enough expansion, let's crank it up and make sure we get enough," and in the process they probably overexpanded a good number of rivets.

Mr. MCCANDLESS. Are they using this kind of a riveting process on their commercial——

Mr. VANDER SCHAAF. Yes, they are.

Is that correct, Ken?

Mr. STAVENJORD. The Douglas process specifications or standards that were used or modified for this aircraft were in fact the same processes, or started from the processes, that are used on their commercial aircraft.

Mr. MCCANDLESS. Let me summarize. You are saying that the problem here is a lack of quality control?

Mr. VANDER SCHAAF. Yes, sir.

Mr. MCCANDLESS. As seen by those onsite responsible for a specification on the final product?

Mr. VANDER SCHAAF. That is correct.

Mr. MCCANDLESS. So it is theoretically possible then that we have commercial airplanes flying around that would have the same problem?

Mr. VANDER SCHAAF. I am not prepared to comment on that. I don't know that.

Mr. MCCANDLESS. Is there an overkill here?

Mr. VANDER SCHAAF. Overkill in the sense that—yes, I think this problem could have been resolved with very little money and very little trouble had somebody wanted to do it. I testified to that earlier this morning when I said——

Mr. MCCANDLESS. I heard what you said. You said 10,000 to 15,000, someone in Seattle would do a number, and my question at that time was, a basic riveting process, which is an integral part of constructing any type of aircraft frame, wing and all of the other components, is a part of the every day, every hour, every minute procedure, and we are going to ask somebody for $15,000 to see if we are doing it right?

That boggles my mind, because if we have that kind of a problem, I am wondering how we install the engines, and what about the landing gear and what about the rest of it?

Mr. VANDER SCHAAF. Mr. McCandless, I had sort of the same concerns, I guess, that you have expressed here. I thought, how can this be a problem if we have been doing rivets since Rosie the Riveter in World War II?

You find when you get into the details of the riveting issue that it becomes an exotic structural integrity kind of issue. There is a lot of engineering time and effort spent on this, especially as you get to new and different materials, and you use different processes. So it is not as simple a problem as one would first believe.

Mr. LIEBERMAN. The contractor did have massive problems with the riveting on this aircraft. The machines made a lot of mistakes that were due apparently to the lack of training of the operators and other problems. And thousands of rivets had to be pulled and replaced.

What we are talking about here is the potential effect of overexpansion. And to test what that overexpansion effect might be, you have to test the exact materials being used in the aircraft you are talking about, because that potential effect will be different depending on the hardness of the aluminum and what the stackup of materials is there. There are several different materials and layers there and a rivet goes through all of them.

So we think you need to duplicate what is actually on the C–17, put some rivets through it, the same kinds of rivets that are on the C–17, and then study the corrosive and fatigue effects over time. It is a fairly simple test. It has been done before for other aircraft. But our point is, it hasn't been done for anything equivalent to the C–17 wings.

Mr. MCCANDLESS. Mr. Chairman, you have been very patient with me. I have other questions, but we have other members I am sure who have other questions.

Mr. CONYERS. Thank you.

The gentlelady from New York, Mrs. Maloney.

Mrs. MALONEY. Thank you, Mr. Chairman.

Would you turn to page 10 of your testimony? You mentioned there were established government oversight and internal management control processes that would have prevented this, but you stated it was not detected or prevented because the questionable actions were impaired by Air Force officials. You also stated that these officials relied on intimidation and abuse of their positions of responsibility to cause improper actions to take place. That is a very strong statement.

Would you give us some details on the form of intimidation which was exerted by the generals on lower-ranking officers? And in your opinion, is this type of intimidation continuing?

Mr. VANDER SCHAAF. Let me have Mr. Rau answer. He can answer that in great detail. I may add to it.

Go ahead, Russ.

Mr. RAU. When we use the term "intimidation," we are talking about pressuring individuals outside of their direct supervision. The senior people criticized in our report supervise fairly large staffs and operations and their rank gives them influence over personnel who don't work for them, too. When we talk about intimidation, we are talking about influencing lower rank officials outside of their direct chain of command.

Mr. VANDER SCHAAF. Subordinate in terms of rank, not in the chain of command.

Mr. RAU. And what we found was that the individuals, because of their grade level and the positions that they held, were highly regarded and they used that power to influence, for example, as we discussed in the report, progress payments being made prematurely to the contractor. And in addition, they used it to make lower ranking officials accept the contractor's financial condition as a basis for releasing the premature payments.

They inaccurately described the nature of high-level meetings that they had attended to individuals not directly in their chain of command, and then misinformed them that they needed to make payments for various reasons and everything was approved at the highest levels.

Mrs. MALONEY. So, in other words, they told their subordinates they had to make these payments. They had to follow the chain of command and make the payments. Do you think the intimidation is taking place now? Is it continuing?

Mr. VANDER SCHAAF. Our concern is reprisal. This is one of the things that we have tried to work out with the Air Force people that are looking at our investigation or doing their own review of the matter. We insist there be judicious handling of certain transcripts we have taken from witnesses in this case, because we are very concerned about reprisal.

I work with reprisal every day, ma'am. Believe me, it happens. We have been exposed to many cases of it.

So that is one of our concerns. I hope intimidation is not taking place anymore with respect to the C–17 program, between the current program management and the defense plant representative office, the government people that are in the facility where the aircraft is being assembled, or with the Defense Contract Audit Agency, the people who audit this program and this contract.

Mrs. MALONEY. Even if safeguards were in place as you testified, should there have been some type of red flag in the Secretary's office when payments of this size—we are talking about a $435 million advanced inappropriate payment—are made. Shouldn't this have been flagged in some way so it doesn't happen in the future?

Mr. VANDER SCHAAF. I think that that would be difficult to do. There are many programs going on. An individual payment or check of that amount is rather high but it is not altogether unusual, I would say, in terms of progress on a major production program. So that wouldn't in itself set off any red flags.

Mrs. MALONEY. Do you think we should have Congress require that whenever accelerated payments or payments without contracts

over $100 million are made, that the Secretary approve it in writing and notify Congress?

We need to get a control on the spending, and if we had known there were problems with this, maybe we could have saved a lot of taxpayers' money.

Mr. VANDER SCHAAF. That used to be required. Congress has faced this problem before. Until November 1990, 10 U.S.C. 2307, I believe, if I have the right citation there, said, if you are going to pay unusual and advance progress payments and the amount is more than $25 million, you have to come back to the Congress before you make such payments.

Here again, we believe payments above those amounts were in fact made, but the proper reports were not filed with the Congress. Because, you see, doing that would reflect badly on the program. If you want the program to go at all costs, you don't want bad news about the program coming forward.

Mrs. MALONEY. In your opinion, are the problems with McDonnell Douglas, from the cost overruns to the illegal payments, an isolated incidence or is this an example of systemic procurement problems in the system?

Mr. VANDER SCHAAF. We believe that part of this may be systemic in the sense that—and I am a little reluctant to use this word but since the GAO uses it, and they serve the Congress—there is a cultural problem in the acquisitional process. When a program gets a huge head of steam, a military department is very wedded to it, the Department of Defense wants it, and it is touted as being critical to them. And I could give you numerous examples over the years. The C–5 at one time fell into this category, the Trident submarine, the B–2, the SSN–21 submarine, and so forth. Whatever the case may be, it develops a head of steam, if you will.

You have military officers whose promotion, standing, and rank among their compatriots and in their institution are somewhat dependent upon them bringing this critical program home.

Mrs. MALONEY. To the extent of violating the law?

Mr. VANDER SCHAAF. Well, that is where things get fuzzy, ma'am, when people start considering bending the regulations.

Mrs. MALONEY. That wasn't a regulation, that was a law, to notify Congress of an overrun, spending money for which there is no contract. Does this take place routinely? Is that what you are implying?

Mr. VANDER SCHAAF. No, it doesn't take place routinely. If it did, I would be here all the time, I guess. No, it was quite unusual.

This program was in trouble, and this happens when programs are in trouble. We saw exactly the same thing in the A–12——

Mrs. MALONEY. But there were ways to legally address the problem.

Mr. VANDER SCHAAF. Absolutely. There is another law, Public Law 85–804, that says: Come back to the Congress if extraordinary relief is justified, get your money, and get our shortfall straightened out. But again, that course was discussed at some of these meetings, and the decision was made, not to seek relief under 85–804. We have to find $550 million between August 1990 and December 1990 before the end of the financial year for the company,

and we are going to find that—and I use the term "find" in quotes here—we are going to find that in other ways.

Mrs. MALONEY. Can you give us some suggestions of how we can make sure this doesn't happen in the future with congressional oversight?

They knowingly violated two laws that we passed in order to get some type of control and oversight over the procurement. Do you have any suggestions of how we can enforce the laws that we have or construct a better system so that this doesn't happen in the future?

Mr. RAU. Ma'am, we have made recommendations in a separate audit report dealing with contractor cost and schedule control systems. I believe they are very relevant to this discussion, in that we recommend that the estimated completion, which is the factor that determines the level of payments when a contractor is in a loss position, be calculated in a certain manner such that these types of payments would not occur. And we believe that is very relevant.

Now, the Department of Defense has initially not concurred with that recommendation. We have asked management to reconsider its position. But we believe that if the estimate at completion is calculated based on a valid formula and that formula is considered by the administrative contracting officer in reaching his determination on progress payments, that then we will be protected from some of the kinds of premature payments we saw with the C–17 program.

Mrs. MALONEY. Are there any other recommendations? Because cost overruns are often a way of life in government contracts.

Mr. VANDER SCHAAF. And they are going to happen. The real difficulty with cost overruns, occurs if the problem is covered up. If you don't reveal it, chances are you are also hiding technical problems. The two are often related.

Your financial indicator may come up earlier as a red flag or your technical indicator may come up first, or they may come up at the same time. And you are going to have test failures as well. That is what we test for. So that doesn't bother us.

But the process that got us here, as Mr. Rau said, was that they couldn't get an estimate at completion that met their needs so they could get their full payment, they figured out a new way to do an estimate at completion so they didn't have to reduce the progress payments. We have to try to tighten down on that.

Obviously, the various oversight organizations have to be alert. We are in there auditing. We should be doing our job, between the organization I am currently trying to lead, and the Defense Contract Audit Agency and the defense contract management command. We all have responsibilities to make sure these things don't happen. And we have to be sure we are alert and we don't get pushed around when we recognize a problem.

Unfortunately, in the C–17 case, the contract and management people who worked for the Defense Logistics Agency had started to recognize the program's problem, and they tried to do something about it, but they were intimidated, in effect, not to do as much about it as they should have.

Mrs. MALONEY. Earlier you identified three generals who were involved with the problem. Is there any civilian oversight over the actions of these generals? If so, what kind of civilian oversight?

You seem to indicate there was a willingness to succeed within the Department, and that they made accommodations. What type of civilian oversight?

Mr. VANDER SCHAAF. In this particular instance, we hold the Assistant Secretary of the Air Force for Acquisition principally responsible to provide that kind of day-to-day oversight that is required in something this sensitive and as large as this program is.

There is also oversight that comes from the Under Secretary of Defense for Acquisition, a relatively new position in the Department, about, I guess, 6 years old now. That oversight is also there.

And then you have other kinds of civilian oversight such as the Defense Contract Audit Agency, and our organization, and so forth. So I don't think it is a problem of a lack of oversight. It is there. People sometimes decide not to follow the rules.

Ms. BROWN. Will the gentlelady yield?

Mrs. MALONEY. May I ask one last question?

The last C–5B, which was a cargo plane built in 1990, cost $95 million. Now, I ask you, why does the C–17 cost nearly $400 million? And how did we select McDonnell Douglas to build this plane? Was it competitively bid? Was it a negotiated contract?

Why is there such a great discrepancy between two planes which are basically the same, large cargo planes. There is a little technical difference, one stops in a smaller space than the other? That is a huge, huge difference in east. Can you explain why taxpayers have to pay so much more for a C–17 than a C–5?

Mr. VANDER SCHAAF. In my opinion, they shouldn't be, ma'am. I can't really explain why it happened. If you go back, the builder was delivering the last C–5B, I think, in about 1988, and before that we were looking at what the cost of the C–17 was at that point versus the C–5, and the C–17 wasn't much more expensive. As to the prices at that point in time, I think the figures I have are about $115 million for a C–5B, but it may depend on where you were in the production line. We were talking $140 million already at that point for a C–17, although the C–17 was designed to have lower operating and support costs than the C–5.

So when you do these kinds of analyses, you say, "With the C–17 we add the ability to use a 3,000 foot runway but we have to add some complexity to the C–17, we have to put a quadruple redundant fly-by-wire system in it, we have to use lots of computers to fly this airplane," and so forth. That increases the cost. But we said, that was worth it because it was a few million per airplane, you use less space on the hard stands, it could turn around, it could back up and do some other things.

Now, coming to your question, at that point the C–17 looked like a good deal. We recently issued an audit report, however, that said, this doesn't necessarily look like such a good deal anymore. We found out that the C–17 will not actually be able to use 3,000 or 4,000 more runways then the C–5. We have looked at data indicating that many of these runways don't have the ability to sustain the loads that either of the aircraft, the C–17 or the C–5, would put on them, so the short landing and takeoff capability is often not really material. But when a program gets a head of steam, it is hard to revisit its basic assumptions.

There is a process ongoing in the Department right at this time to take a look at all of these options and review this entire situation. Hopefully that will get done this summer before Congress has to make a decision on whether or not to appropriate funds for the next lot of these airplanes. And there will be a debate of these matters, and it should get resolved at that point.

Mrs. MALONEY. I will yield to Ms. Brown.

Ms. BROWN. Thank you.

It seems as if we have spent $6 billion. We need to spend at least $2 billion more. And we have four planes. I need to know what we need to do. Do we need to stop this program at this point? Do we need to put it on hold? It seems like that is a lot of money.

Mr. VANDER SCHAAF. We think you have to put it on hold at least with regard to not awarding lot 4 and not awarding lot 5 until the Defense Department does what we call a total cost and operational effectiveness analysis. Again, that is the minimum you have to do, because of the cost factor you are talking about.

The Air Force doesn't get only four airplanes for $6 billion. That includes all the cost to design and develop this airplane, which is intended to be a significant improvement in many respects over existing airplanes. But the main point one has to consider here is, that you are looking to have a cargo kind of vehicle, a truck. You want an airplane that is easy to maintain, doesn't take a lot of man hours per flight hour, is useful in peacetime, can carry big loads, and is cheap to operate. You are not looking for high performance, high tech in the usual sense of the word.

I think we ended up with something where the technology is just probably costing us too much. But those issues are being debated over in the Department right now.

Mr. RAU. What we recommended in one of our previous audit reports is that they do a cost and operational effectiveness analysis that addresses the type of questions you are asking: Is this still the most cost effective way for the department to proceed?

One of the key factors there is, with the increased costs of the C–17 program, whether it is affordable. And as part of that, we recommended they do an affordability assessment to ask, can we afford this aircraft? Even if these features are desirable, can we afford to procure this aircraft or should we look at other alternatives?

Ms. BROWN. But we have spent $6 billion. I want to know, at the end of this, what do we have? Just the research and design?

Mr. RAU. And as of this time——

Ms. BROWN. And four planes.

Mr. VANDER SCHAAF. And we will receive a couple of more. But the indications are that the contractor intends to make substantial claims in addition, and that will be a contentious issue between the government and the contractor.

My projection is that you are not going to see six flying airplanes for the $6.6 billion that is the ceiling price of this contract. Eventually somebody's got to pay or there will be a lot of difficulties.

There continues to be a wide range of estimates to complete the contract. This is what we talked about previously; different estimates at completion. The Air Force and the contractor were using understated estimates for completion in 1990. Now I have seen an estimate as high as $9.2 billion to complete the contract. That is

well on the high side at the present time. But estimates in the range certainly of $8 billion are not on the high side.

Ms. BROWN. And for $8 billion, what will we have?

Mr. VANDER SCHAAF. You will have basically six flying airplanes.

Ms. BROWN. I thought the contract was for 122.

Mr. VANDER SCHAAF. The program is for 120 airplanes. It started off in 1981 to buy 210 airplanes for about $35 billion, as the total program cost.

Today, the plan is to buy about 120 airplanes for about $35 billion. Although the number of airplanes was cut nearly in half, now we are talking about the same level of resources going into the program as were planned for a much larger buy about 10 or 12 years ago.

In addition, there is great doubt whether the $35 billion is necessarily a good estimate, although I am not prepared to say it is not.

Mr. CONYERS. The gentlelady from New York.

Mrs. MALONEY. Thank you, Mr. Chairman.

A great deal of the testimony today was about the actions of three Air Force generals. I have been told by your staff that they have refused to testify. I would like to read their names into the record. Lt. Gen. Edward P. Barry, former C–17 program executive officer; Maj. Gen. Michael Butchko, former C–17 program manager; and Maj. Gen. John M. Nauseef, former Deputy Chief of Staff of the Air Force Systems Command.

I feel that these individuals should testify and speak for themselves regarding the allegations of mismanagement, knowingly not following two Federal laws on alleged intimidation, on alleged mismanagement.

In addition, other individuals have been identified by the IG in his testimony today, two senior Defense Department officials who oversaw Air Force procurement. Mr. Michael Donley, Assistant Secretary of the Air Force; Ms. Eleanor Spector, Department of Defense Procurement.

I request, Mr. Chairman, that you subpoena these witnesses, since they will not come and respect the request of a congressional committee, to explain why over $500 million was allocated, when by law they were not supposed to allocate this money.

I feel that it is incumbent upon us, especially when we are looking at new taxes that we manage the dollars we have more efficiently and that we receive some type of explanation for this alleged multimillion dollar mismanagement of government funds.

Thank you.

Mr. CONYERS. Thank you very much.

Mr. McCandless.

Mr. MCCANDLESS. Thank you, Mr. Chairman.

Congressman Horn had to leave to go to the Rules Committee because of an amendment that he hopes will be accepted. He asked me if I would ask this question for him, with your permission, Mr. Chairman.

He doesn't understand why you did not provide the Air Force with an opportunity to comment on your report prior to its release. He has evidently had quite a bit of experience in this field, and he says the government auditing standards that apply to all Federal

Government inspectors general state that a report should include the pertinent views of responsible officials.

The question is, why didn't you give the Air Force an opportunity to comment? And then he says, is this unusual?

Mr. VANDER SCHAAF. It is not unusual in this kind of situation. First of all, this is not an audit report. We follow the audit standard and get comments on audit reports. This is what I would refer to as an administrative investigation, an administrative inquiry.

Procedures are a bit different for administrative inquiry work. I have a special organization that generally does this kind of work, but in this particular case, the auditors had the lead on it because the auditors had the requisite backup material and technical expertise. We had done, as I discussed this morning here, three or four audits involving the matters that we were talking about. The auditors did this special administrative inquiry, this administrative investigation, and provided it to the Office of the Secretary of Defense and the Air Force for their comment if they want to comment and for their administrative corrective action.

That is the way we normally do business in these matters. We get our facts right, we don't see any need to debate before the report is released, and it is in the Air Force's hands to take the corrective action that they deem appropriate, based on our report.

Mr. MCCANDLESS. Let me follow that up with another question. Your report concluded the Air Force knowingly engaged in secret delivery of unjustified funds to McDonnell Douglas.

So my question to you would be, do you believe that this bailout scheme reached into the Office of the Secretary of Defense or those under his direct command such as the Office of the Under Secretary of Defense for Acquisition or the Office of the Director of Defense Procurement?

Mr. VANDER SCHAAF. I am glad you asked that question, because we looked at that matter very, very carefully. We could find nothing from all of the witness interviews or from any of the paperwork that we could obtain, that anyone in the Office of the Secretary of Defense, to include the Director of Defense Procurement and the Under Secretary of Defense for Acquisition, said to do anything but follow the rules.

They received some Air Force briefings, but Air Force put a lot of smoke and fog over the subject. There is a comment I saw that Ms. Spector made here—I think her testimony was in July 1991—when the question was asked of her, "Are you aware of any unusual or advance progress payments or other things going to McDonnell Douglas?" This was when she was testifying primarily on the A–12 program which was abruptly canceled for much the same kind of problems in terms of reporting difficulties that the C–17 has.

And she answered that question by saying she was not aware of such payments. I believe her answer was truthful.

We have considered that episode in some detail. I did not believe she was referring to anything with respect to the C–17, and I don't believe she was aware of this business going on in terms of making unusual payments based on an estimate that was knowingly not a good estimate for completion at the time this happened.

Mr. MCCANDLESS. In December 1990, on page 8 of your statement, before you forget about it——

Mr. RAU. If I might refer back to a previous question, the aircraft P–6 under the contract modification negotiated September 1990 was supposed to deliver in March 1992. By this juncture, we should have been awaiting delivery of the 16th aircraft by this point in time.

Mr. MCCANDLESS. March 1992, had the original contract been lived up to?

Mr. RAU. This is the modified schedule. This isn't even the original. This was the September 1990 modification.

Mr. MCCANDLESS. I thought I said "original" when I asked the question.

Mr. RAU. I don't have the original schedule with us. We could put that into the record.

Mr. VANDER SCHAAF. It goes back about a year before that.

[The information follows:]

C-17 ORIGINAL DELIVERY SCHEDULE DATES
FROM CONTRACT F33657-81-C-2108

Aircraft	Delivery Date
T-1	15 Oct 1985
P-1	28 Feb 1986
P-2	31 Aug 1986
P-3	31 Oct 1986
P-4	31 Dec 1986
P-5	30 Apr 1987
P-6	30 Apr 1987

Mr. MCCANDLESS. On September 10—and I think this is interesting because it is a part of your statement here—the Director of Defense Systems and Programs Office in so many words felt that there were indications that all was not going well in the final assembly, and that—I am quoting here from your report—and in the subsequent production aircraft.

Now, the memorandum also noted that the officer of responsibility had repeatedly denied members of the director's staff access to the facility to review the T–1 assembly and complete certification.

I find that kind of interesting. I need some expansion on that.

Mr. VANDER SCHAAF. I do also. I think that the Office of the Secretary of Defense was not exercising the authority as they should have. Let me go back just a minute to explain.

It was the second time this happened and it bothers us. The first time involved the A–12. They were going to assemble this aircraft at a facility in Oklahoma. This same specialist, whose background I guess is mechanical engineering or production engineering, went to that facility and issued a report, which to this day I believe might have changed the whole tenor of what happened on the A–12 had it gotten to the attention of the Under Secretary of Defense for Acquisition. That report was passed up the chain, but got stopped when it reached the top.

He said, this place isn't ready to assemble A–12 airplanes, much less meet any kind of delivery dates. This vital information got tossed away.

In the C–17 case, the same individual had some inkling that, this T–1 aircraft was really not complete and not assembled. He wanted to go to the plant and look. He requested to do so and was denied access to the plant by the Air Force C–17 System Program Director.

It is intolerable to have the Under Secretary of Defense's staff be denied access to facilities to do their job.

Mr. MCCANDLESS. He did not pursue a course of action which would have given him access, to the best of your knowledge?

Mr. RAU. He did elevate the matter in December 1990, but before it was resolved the Air Force had accepted the aircraft.

Mr. MCCANDLESS. Mr. Chairman, I don't want to take any more of the committee's time. I would ask unanimous consent that I be able to ask, in writing, questions of the inspector general for which I hope he would be amenable in answering.

Mr. VANDER SCHAAF. Most certainly.

Mr. CONYERS. Without objection, so ordered.

Mr. MCCANDLESS. In layman's language so that an old fender-bender type guy could understand.

Mr. VANDER SCHAAF. I will do my best, sir.

[The information follows:]

Mr. McCandless: Your January report details a series of Fall 1989, transactions which you conclude demonstrate a deliberate effort to provide unearned cash to McDonnell Douglas. Further, in its testimony to the House Armed Services Committee on March 10th, the GAO described a series of December 1992, contract modifications which permitted Lot III delivery delays and provided additional long lead funding on Lots IV and V. Does it appear to you that these latest modifications once again reflect an Air Force attempt to keep production on line regardless of longterm contract costs?

Mr. Vander Schaaf: The recent actions to modify the C-17 contract delivery schedule and provide additional long lead funding for Lots IV and V are a direct result of continuing schedule slippage on the C-17 program. Rather than being an Air Force attempt to keep production on line, the modification of the production schedule is a recognition of continuing production delays that will impact the costs on existing contracts and the overall life-cycle costs of the program. Provision of additional long lead funding for subsequent production lots is beneficial to meeting production schedules on future contracts; however, it appears to be essential to the C-17 program because the prerequisites for contract award established in the event-based acquisition strategy have not been met on schedule. Long lead funding is generally provided in order to ensure delivery schedules can be met by ensuring long lead items are available when required on future production contracts, not because of failure to meet contract milestones and inability to complete contract negotiations. The failure of the contractor to make deliveries or complete prerequisite events on schedule resulted in repeated contract modifications of the delivery schedule and exceptionally high levels of long lead funding relative to estimated contract prices. We share the GAO concern about the Government risk associated with such high levels of long lead funding prior to an agreement on contract price and believe it serves to further delay contract negotiation.

We have not reviewed the consideration received by the Air Force for the modification to the contract delivery schedule; however, we intend to do so as part of a new audit of the C-17 program to begin later this month. We previously reported that the Air Force received inadequate consideration for previous contract modifications to the delivery schedule, which in our opinion was a significant and unjustified financial concession to the contractor. I also mentioned in my testimony to the Committee that, given the extended delays in the award of the Lot IV contract, it is our recommendation not to make the award until after a Defense Acquisition Board review is completed.

Finally, it should be noted that one of the primary obstacles to completing Lot IV negotiations is the allocation of sustaining engineering costs to production contracts. Our reports, and testimony addressed the accounting practice change that permitted the present allocation methodology, which was inappropriate and approved hastily in October 1990 as a financial concession to the contractor to overcome near-term funding shortfalls.

Mr. McCandless: Both McDonnell Douglas and the Air Force have stated that the acceptance of T-1 Assembly Complete was never meant to imply that the plane would be entirely finished. They state that you have misinterpreted the term. Please provide your response to this assertion for inclusion in the record.

Mr. Vander Schaaf: We fully recognize that the term "T-1 Assembly Complete" was never meant to imply that the plane would be entirely finished. The central point made in our reports and testimony is that the establishment, pricing and acceptance of the T-1 Assembly Complete contract line item were significant concessions to the contractor. The Air Force actions impaired proper oversight of the program by the Congress and the Office of the Secretary of Defense, and provided false indications of program success in order to assist the contractor in obtaining external financing and the Air Force in obtaining additional funding from the Congress. That point aside, the facts of the matter are that the aircraft did not meet the terms established for acceptance, the Air Force was aware it did not at the time of acceptance, and no withholds were established for the incomplete work. For example, basic functionality of numerous aircraft systems was not demonstrated as required. Significant out-of-station work logically resulting from premature movement of the aircraft from the assembly facility had a major impact on ground and flight test operations, although minimal disruption of those preflight activities was a condition of acceptance. Required documentation was incomplete and the Air Force acknowledged in its acceptance that certain additional work was required. Finally, the C-17 Program Director explained his actions as being based partly on providing a morale boosting victory to contractor employees, which is not justification for overlooking the true status of the aircraft.

It is important to note that T-1 Assembly Complete was established as a contract line item as part of the consideration exchanged for significant contractor delays in aircraft delivery. In essence, the Air Force provided consideration to the contractor for the slippage. Subsequently, the Air Force priced the contract line item based on an analysis of incurred costs provided by the contractor with no assessment of physical progress toward acceptance of aircraft T-1 at first flight. Together with the premature acceptance decision, that disturbing pattern of actions was, in our opinion, part of a larger effort to encourage continued contractor performance through implementation of an Air Force plan of action to improperly assist contractor cash flow during a period of financial difficulty.

Mr. McCandless: How different are the problems of the C-17 from those affecting most other major defense system acquisitions?

Mr. Vander Schaaf: The fact that the C-17 program has experienced problems in development is not unusual; however, the lack of candid disclosure of the problems and appropriate action by Air Force management clearly separates the C-17 from other major Defense acquisition programs. In that regard, we see numerous similarities between the failed Navy A-12 program and the C-17 program in how management responded when development problems occurred. Programs can experience a wide range of problems that are generally overcome by timely recognition and prudent management action. The refusal of the Air Force to acknowledge the problems on the C-17 program unduly delayed corrective actions and compounded the problems. We believe that overly zealous program advocacy obscured the need to reestablish sound systems engineering discipline and to negotiate executable development and production contracts. Eventually, the lack of candor only served to increase oversight and scrutiny of the program and further delay needed management action. Additionally, the denial of problems consumed the attention of program management as the facts came to light and management's credibility was called into question. The problems on the C-17 program were to a large extent predictable and, therefore, avoidable. As such, we view the program not as a failure of the acquisition process, but rather of individuals. We made recommendations accordingly.

Mr. McCandless: There seems to be some dispute between the IG's office and McDonnell Douglas as to the potential effects of rivet expansion on the wings. Would you provide Mr. Stavenjord's background and qualifications for conducting this type of detailed technical engineering assessment?

Mr. Vander Schaaf: Our team was well qualified for this type of assessment and we have full confidence in their findings. Mr. Stavenjord typically directs technical assessments for over one hundred projects a year. He holds masters and baccalaureate degrees in Mechanical Engineering and a baccalaureate degree in Engineering Science. Examples of other projects directed by Mr. Stavenjord are the technical assessments of the Balanced Technology Initiative for Ultra Wideband Technology, the Low Temperature Effects on Air-Launched Cruise Missile Flight Data Transmitters, and the corrosion in C-17 aluminum.

Prior to being selected in 1984 as Technical Director of the Technical Assessment Division, Office of the Inspector General, Department of Defense, Mr. Stavenjord was appointed as Professor of Engineering Management at the Defense Systems Management College in 1983. He was Director of the Surface Warfare Systems Foreign Military Sales Program for the Naval Sea Systems Command (NAVSEA), 1979-83. Also, at NAVSEA he was Senior Project Engineer for the TERRIER Weapon System's computer programs and modernization, 1975-79; Project Engineer for advance missiles development, 1975; and completed the Management Development Program, 1972-75. He was Project Engineer on the Anti-Ship-Missile Defense Program at the Naval Ship Weapon Systems Engineering Station, 1968-72.

Also working on the program were Mr. Chandra Sankhla, Mr. Milton Kaufman and Mr. William Fox, Sr. Mr. Sankhla possesses a masters degree in Industrial and Systems Engineering and two bachelor degrees, one in Mechanical Engineering and the other in Mathematics. He has approximately 28 years of experience in engineering and management, including 12 years in defense acquisition and 11 years in design and manufacturing.

Mr. Kaufman has a baccalaureate degree in Industrial Management and over 46 years of experience in manufacturing and management, which includes 18 years in defense acquisition and 28 years in industry.

Mr. Fox possesses over 27 years of experience in Government and industry, which includes acquisition and manufacturing experience.

Mr. McCandless: Why do you find current testing and the planned durability article test insufficient to measure the impact of rivet expansion on wing lifespan?

Mr. Vander Schaaf: The testing reported to us did not include stress-corrosion or fatigue tests for all the materials, tempers, dimensions and rivet expansion of the structures they were purported to represent. In addition, the durability article does not contain the amount of rivet expansion in the 2024 aluminum alloy of the lower wing skins that is present in later C-17 ships.

The testing conducted to date consisted of stress-corrosion tests requested for the MD-11 commercial airliner program, stress-corrosion tests requested by the Air Force in response to our questions, and tension-tension fatigue testing conducted for qualification of the automatic riveting machines. The test reports presented to us do not include stress-corrosion tests with the material and rivet expansions of the lower wing panels or fatigue tests with the amount of rivet expansion actually in the C-17 wings.

Concerning the Durability Test Vehicle (DTV), the amount of rivet expansion documented in the 2024 aluminum alloy of C-17 lower wing skins in later ships is not present in DTV wings. Therefore, in terms of rivet expansion in the lower wing skins, the DTV wings are not representative of later production wings. Although not a good test for stress-corrosion, the C-17 durability test could have provided information on possible fatigue failure from the amount of rivet expansion in the lower wing skins of later aircraft if the DTV were representative. Since it is not representative, the DTV warranty provisions do not protect the Government from the possible effects of the amount of rivet expansion being experienced in the later production aircraft.

Mr. McCandless: Your solution to the problems with the management of this contract is to make the Program Executive Officer directly answerable to the Under Secretary of Defense for Acquisition. No one else from the House Armed Services Committee, the Air Force, or GAO seems to accept this easy answer solution. They all argue that the military's "Can Do" mentality is the problem, and that redrawing lines on a paper will have little effect. Why do you continue to support the command chain restructuring fix?

Mr. Vander Schaaf: We disagree that a "can do" mentality is a problem per se; in fact, that attitude is probably pervasive in successful programs and should be encouraged. Our recommendation is focused on establishing program management accountability to the Defense Acquisition Executive. While seemingly simple, it addresses what we consider to be the fundamental problem of a lack of long term accountability to the one official specifically holding authority to make the most critical program decisions. Those decisions ultimately are as good as the information upon which they are made. Accurate and candid information must be provided by the program managers, unfettered by the "needs and desires" of the Military Services.

Our recommendation is intended to create unity in the acquisition process between the program manager and the decision authority by significantly reducing the potential for direct influence from outside the acquisition chain of command. Presently, the linkage between responsible program management and the system of individual performance evaluation and recognition is only indirect, thus permitting potentially conflicting goals or objectives to be inserted into the management process. The A-12 and C-17 management problems highlight the need for program officials to be responsive to the informational requirements of the Defense Acquisition Executive. The current system of officer (program manager) performance evaluation does not provide for input from the Under Secretary of Defense for Acquisition.

Our recommendation would create the proper individual allegiance on acquisition matters not to a particular Military Department, but rather to the overall best interests of the Department of Defense, as determined by the civilian leadership. In so doing, barriers to candid disclosure in the acquisition process that may presently exist can be overcome.

Mr. CONYERS. We thank you very much.

Do you have any observations that in conclusion you would like to add?

Mr. VANDER SCHAAF. I think we have addressed most of the business. Questions have to be asked by the Congress with respect to the cost issue, which I discussed a little, I believe, with Ms. Brown and Mrs. Maloney. But certainly there is more to be said about that.

The cost of the C–17 has gotten to the point of near ridiculousness. Not many years ago we could buy a squadron of F–16's for the price of one of these airplanes. We have to have airlift to distant places but we can get there with C–141's and C–5's and there are a lot of alternatives to this program that need to be considered.

In addition, there are some technical problems that we are not totally familiar with, but they deal with such issues as the blown flaps, and the committee is aware of the issue on whether redesign has to take place there. There is the issue of strengthening the wings, for those wings already built and redesigned. There is the problem with the leading edge slats. When you back the aircraft up, there is too much heat on these slats. There are a lot of things to be concerned with and consider.

I really believe the Department of Defense has the message and is looking at this program in a serious sort of way at this point. It is unfortunate that some of these issues were not dealt with better from the start. A lot of alarm bells, were ignored. Colonel Tollefson was sending in "bell-ringer" reports regularly during the fall of 1990 trying to sound the alarm, if you will, and it didn't seem that anybody wanted to pay a heck of a lot of attention. And the Air Force could have avoided some of these problems had it taken proper actions much earlier to bring this program into line.

I guess that is the final point I want to make. It is too bad we don't deal with these problems right away when we first identify them. In the case of the C–17 by January 1990 it was well-known to the Air Force that we were facing cost and schedule problems.

Mr. CONYERS. We are indebted to you, Mr. Vander Schaaf, and your excellent staff. Thank you very much.

Are the following witnesses from the Department of Defense in the hearing room, Mr. Michael B. Donley, Ms. Eleanor Spector, Lt. Gen. Edward P. Barry, Maj. Gen. Michael Butchko, Maj. Gen. John M. Nauseef? Since these individuals have not appeared today to provide testimony about C–17, we need to clarify the record.

I ask unanimous consent to include the letter from Deputy Secretary of Defense William J. Perry in the record at this time.

[The letter from Mr. Perry follows:]

ONE HUNDRED THIRD CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON GOVERNMENT OPERATIONS

2157 Rayburn House Office Building

Washington, DC 20515-6143

March 16, 19

The Honorable William J. Perry
Deputy Secretary
Department of Defense
The Pentagon
Washington, D.C. 20307-1155

Dear Mr. Perry:

We have received your letter of March 16, 1993 and cannot accept the reasons stated therein for refusing to produce witnesses who can provide relevant testimony to the Subcommittee about the financial and technical problems with the Air Force's C-17 Airlifter Program.

After carefully reviewing your letter, we must conclude that the Department of Defense has no legal basis for refusing to produce the requested witnesses. In addition, the other concerns you raise do not, in our judgment, justify that refusal.

First, your letter takes the position that the Department of Defense is only willing to provide other witnesses to discuss the "current status" of the C-17 Program. This is not responsive to the Subcommittee's legislative and oversight needs.

As the Chairman stated in his original request of January 21, 1993, the Subcommittee is "examining the financial and technical aspects of the program, as well as the conduct of Air Force personnel involved with the administration of the C-17." As further explained in the letter of March 8, 1993, "our two year long investigation indicates that there may have been collusion on the part of officials at the Department of Defense to inappropriately funnel federal funds to McDonnell Douglas, and to conceal critical information from senior defense officials as well as the Congress." The Department has long been on notice that the Subcommittee is conducting an investigation of questionable financial practices and technical deficiencies in the C-17 Program and that the requested witnesses are necessary to that investigation.

Second, you state that the Department does "not believe that it is fair to direct individuals who are under consideration for disciplinary action to participate in a hearing to answer questions on the same conduct for which they could be disciplined." We know of no legal authority indicating that the possibility of disciplinary action is a basis for a department to refuse to produce an employee who can provide relevant testimony to a Congressional oversight hearing.

Certainly these individuals will give the same answers whether questioned by the Subcommittee or by the Department of Defense, and any disciplinary action will be based on the facts so established. The Congress and the public have the right to know the truth about the alleged misconduct as soon as possible. Contrary to your suggestion, there is nothing unfair about the Subcommittee's process.

Third, you argue that "the Department of Defense should be permitted to conclude its review and arrive at its response to the recommendation for discipline without subjecting that process to the pressures of a Congressional committee hearing." We do not understand how presenting the truth at a Subcommittee hearing could interfere with that process in any way. Congressional oversight cannot be suspended whenever disciplinary action is recommended by an Inspector General.

While the unfortunate history of the C-17 Program under the previous Administration may cause embarrassment, that is not a legitimate basis for attempting to curtail this Subcommittee's oversight hearings. Full disclosure is the best first step in addressing the financial and technical problems of this program.

Finally, as you may know, 5 U.S.C. § 2954 explicitly requires the Department to provide this Subcommittee with any information requested by the Subcommittee relating to any matter within its jurisdiction The Department's refusal to produce the requested witnesses to testify about the C-17 Airlifter Program contravenes this statutory mandate and cannot be accepted.

We urge you to reconsider the Department's position and to produce the requested witnesses at the Subcommittee hearing tomorrow.

Sincerely,

John Conyers, Jr.
Chairman

Rep. Cardiss Collins

Rep. Glenn English

Rep. Stephen Neal

Rep. Carolyn Maloney

Rep. Tom Lantos

Rep. Corrine Brown

THE DEPUTY SECRETARY OF DEFENSE
WASHINGTON, D C 20301-1000

16 March 1993

Honorable John Conyers, Jr.
Chairman, Committee on Government Operations
House of Representatives
Washington, D.C. 20515-6143

Dear Mr. Chairman:

This is in response to your letters of March 8th & 15th, 1993, regarding the Department of Defense witnesses for your Committee's hearing on March 17, 1993

You advised that the purpose of the hearing is to examine the current status of the C-17 program and the conduct of Air Force personnel involved with the administration of the program. As stated in Ms. Lee's letter to you of March 5, 1993, we are willing to provide the officers who are now responsible for and who can respond on behalf of the Department on the current status of the C-17 program

The Inspector General's report, which was prepared in response to your request, recommended that the Secretary of the Air Force take appropriate disciplinary action against certain Air Force personnel. Secretary Aspin has expressed his concern over the report and has asked the Air Force to provide recommendations to me by April 20, 1993. These recommendations are to include the Air Force's proposed response to the Inspector General's recommendation for disciplinary action

This is why we have declined your request to provide the named individuals to appear at the March 17, 1993 hearing. We do not believe that it is fair to direct individuals who are under consideration for disciplinary action to participate in a hearing to answer questions on the same conduct for which they could be disciplined. Additionally, I believe that the Department of Defense should be permitted to conclude its review and arrive at its response to the recommendation for discipline without subjecting that process to the pressures of a Congressional committee hearing.

On the other hand, I want to emphasize that we are anxious to assist your committee in the exercise of its responsibility. Following our receipt of the Air Force report, which is scheduled for April 20, 1993, and the decision regarding the Inspector General's recommendation for disciplinary action, we stand ready to provide appropriate witnesses to your committee to explain the Department's decision on that recommendation and such other related matters as may be appropriate and of interest to your committee.

I am sorry that this contentious issue is the first business I have to conduct with you since my confirmation last week. I expect that we will have many issues to discuss in the years ahead, and I would hope to get these discussions off to a

constructive start. Let me suggest that we schedule a meeting in the near future to discuss the ways in which the Department can assist you, including a discussion of your ongoing examination of the C-17 program.

Sincerely,

William J. Perry

Mr. CONYERS. Last Congress, the subcommittee conducted two oversight hearings on C–17. We received testimony concerning a series of questionable actions in late 1990 by Defense to provide unusual financial support to McDonnell Douglas, the prime contractor for the C–17.

Because these actions raised such questions, on February 2 of last year, I asked the Department of Defense inspector general to conduct a comprehensive review as a part of the subcommittee's ongoing investigation.

On January 14 of this year, the subcommittee received the IG's report on this review entitled "Government Actions Concerning McDonnell Douglas Corporation Financial Condition During 1990."

The inspector general report concluded that Air Force officials had taken actions in connection with the funding of the C–17 which resulted in potential violations of statutes and acquisition regulations.

Shortly after receiving that report on January 21 of this year, I wrote the Secretary of Defense to request that the Air Force officials identified in the inspector general report appear and testify before this subcommittee today. Specifically, I requested the testimony from Lieutenant General Barry, Major General Butchko, and Major General Nauseef.

In addition to those individuals who had been identified by the inspector general, I requested the testimony of two senior Defense officials who oversaw Air Force procurement, including C–17. They were Mr. Michael Donley and Ms. Eleanor Spector.

These requests were very carefully drawn and intended to elicit testimony from those individuals who were most directly implicated in the questionable actions relating to the C–17 program. Each of these witnesses was personally involved in actions relating to the C–17, and I believe their testimony is necessary to complete the subcommittee's investigation.

We received no response to this request for witnesses until March 8, when the Defense Department suggested that other witnesses appear and testify at our hearing today. The Department cited no legal basis for refusing to provide the witnesses requested.

I immediately replied to Defense Secretary Aspin that the witnesses I had identified were needed if this committee is to effectively execute its legislative and oversight responsibilities. I also expressed my willingness to consider receiving testimony from any other additional witnesses that the Defense Department might wish to suggest.

One week later, on March 15, the subcommittee had received no response to this offer, or any further explanation of the Defense Department's actions. I therefore once again wrote to Secretary Aspin reiterating our need for these witnesses and requesting that the Defense Department cite any authority which permitted it to refuse to produce these witnesses.

Yesterday, I received a letter from Deputy Secretary of Defense, Mr. Perry, which I have already put in the record, which while providing no legal authority for withholding testimony, did set out two reasons for the Department's resistance.

One: "We do not believe that it would be fair to direct individuals who are under consideration for disciplinary action to participate in

a hearing to answer questions on the same conduct for which they could be disciplined."

And two, he believed that "the Department of Defense should be permitted to conclude its review and arrive at its response to the recommendation for discipline without subjecting that process to the pressures of a congressional committee hearing."

Subcommittee members Cardiss Collins, Glenn English, Steve Neal, Tom Lantos, Carolyn Maloney, and Corrine Brown have joined in with me in signing a letter which responded to these assertions. And as we explained, we know of no legal authority indicating that the possibility of disciplinary action is a basis for a Department refusing to produce an employee who can provide relevant testimony to a congressional oversight hearing.

In addition, we pointed out that presenting the truth at a subcommittee hearing would not or should not interfere with the Department of Defense's decisionmaking process in any way.

We further explained that congressional oversight cannot be suspended whenever disciplinary action is recommended by an inspector general.

Finally, we urged the Department to reconsider its position and produce the requested witnesses here today. And it appears that despite these extraordinary efforts to secure cooperation by the Defense Department, there has been no change in its position.

Under the Constitution, the Congress serves as a check on the activities and spending of the executive branch. As the chief oversight committee of the House of Representatives, the Committee on Government Operations and this subcommittee play critical roles in securing information from the executive branch so that the Congress can make informed judgments about Federal programs.

Despite our repeated inquiries, the Department of Defense has provided no legal authority for its refusal to produce witnesses who can provide relevant testimony to an ongoing investigation.

Under the circumstances, if the subcommittee is to effectively discharge its responsibilities to Congress and the American people, I believe that we must consider invoking compulsory process. It is neither a pleasant nor desirable way for us to begin oversight of the Department of Defense in a new administration. And I am of course fully prepared to consider any reasonable accommodation to avoid an unnecessary confrontation.

I can assure the subcommittee and every member on it that I will personally be available to discuss any Defense Department proposal in this connection. I do not believe, however, that we can accept the Defense Department's legally baseless refusal to produce witnesses and still function in any meaningful way as an oversight committee.

I am also sensitive to the health circumstances surrounding the Secretary of Defense and will take them into full accommodations in my consultations with Mr. McCandless.

Since we have already scheduled a hearing for Tuesday, March 23, 1993, at 10 a.m., we will consider, unless something occurs between now and then, the issuance of subpoenas on Wednesday morning, March 24, at 10 a.m.

The Chair recognizes the ranking Republican member, Mr. McCandless.

Mr. MCCANDLESS. Thank you, Mr. Chairman.

I have the letter before me which you asked unanimous consent to include in the record, and I have no objection. You have quoted from this letter in your statement.

I would simply add that in this letter, Secretary Aspin has expressed his concern over the report and has asked the Air Force to provide recommendations to the Under Secretary or the gentleman in question, William Perry, who is a Deputy Secretary of Defense, and that these recommendations would be available by April 20, and that they would include a proposed response to the inspector general's recommendation for disciplinary action.

I think that probably is the gist of the letter from the Deputy Secretary of Defense to you dated March 16.

Mr. CONYERS. I thank my colleague.

Mr. MCCANDLESS. I mention this, Mr. Chairman, because it would not appear to me that the Deputy Secretary or the Secretary of Defense are dragging their feet in any way, because they continue to say that once that has been—that information has been acquired, they are anxious to assist the committee in exercising the responsibility and would make themselves available.

Mr. CONYERS. The Chair calls William Jenne. Please stand and rise your right hand.

[Witness sworn.]

Mr. CONYERS. Thank you very much, Mr. Jenne. Please be seated.

We are delighted to find out that you could travel from California to Washington without incident. We accept your statement into the record. You may proceed in your own way.

STATEMENT OF WILLIAM E. JENNE, FORMER ASSISTANT TO THE VICE PRESIDENT OF FISCAL, MCDONNELL DOUGLAS CORP.

Mr. JENNE. Thank you, Mr. Chairman. Let me get my statement out.

Mr. Chairman, thank you for asking me here today before this committee to discuss the situation at the Douglas Co. in the first half of 1990. I will make a brief opening statement and ask that my full statement be included in the record.

Mr. CONYERS. It has already been included.

Mr. JENNE. In summary, my full statement will show the following.

One: Douglas Aircraft had increasingly severe cost and schedule problems during the 1986–90 time period on all major programs.

Two: By May 1990, internal company cost estimates indicated the C–17 was headed for a huge $1.2 billion to $2.1 billion overrun.

Three: This was never disclosed to the general investing public or the U.S. Air Force in 1990 in any McDonnell Douglas financial report.

Four: McDonnell Douglas chose to use an estimate they described as "at or near break even," implying no profit nor any loss, when they knew or should have known of the inadequacies of that estimate. The question is whether a reasonably prudent publicly owned company would have taken that course of action in the same circumstances. I don't think they would.

I retired from McDonnell Douglas in June 1988 with 27 years of experience. While an employee, I held various positions such as director of operations control, director of DC–10 program planning and control, director of major subcontracts, and director of MD–11 operations control.

When I left in June 1988, the T–45 Navy trainer was badly overrun and badly behind schedule. C–17 engineering drawing releases averaged 6 to 9 months late to schedule. MD–11 critical machined parts were forecasted to be over 36 weeks late to their scheduled assembly start dates. MD–80 assembly hours per airplane had almost doubled compared to that level for that same type of work done in 1985. As a matter of fact, by 1989, they ran up to and slightly over 100,000 assembly man-hours per airplane.

In January 1990, I went back to Douglas on a contract basis, as a consultant to Mr. R.A. Bibee who was the then vice president of fiscal. My job assignment was to develop an independent cost estimating and pricing function reporting to Mr. Bibee. He had some concerns about the quality and accuracy of the financial forecasts and cost sales estimates provided by the various program offices for use in the financial statements. At that time there did not exist an independent check-and-balance function in fiscal. That more or less was taken away during the February 1989 reorganization.

Once we had the function organized and staffed, we began to look into the cost and schedule status of the three major programs, the MD–80, the MD–11, and the C–17.

The MD–11 assembly cost and schedule status was the first review that we made. In summary, we found that the 1990 operating plan estimates at completion, which had been put together in November/December of the prior year but for 1990, were already overrun on four airplanes in process, and the others in process would greatly exceed the planned learning curve cost reduction per unit. The review results indicated a potential overrun on the first 50 aircraft of $486 million and another $675 million on the following 251 aircraft, which was a part of their 301 airplane pool for accounting purposes.

Then we looked at the MD–80 assembly, same types of results as we found with the MD–11—not as much money involved but the same type of thing going on. The program was 1½ months behind schedule. For example, in the month of January 1990, 11 airplanes were scheduled for delivery, one actually delivered.

All airplanes delivered through March of that year, 1990, had overrun their operating plan assembly budgets by 15.3 percent on average. And this program was supposed to be the cash cow for the company in 1990.

On April 19, 1990, we completed, the cost estimating group completed a review of the C–17 assembly man-hours for units then in process. Our analysis showed that the first airplane known as T–1 was 35 percent complete, had expended 62.2 percent of the funds at completion when compared to the 1990 operating plan estimates at completion, and therefore most likely would suffer an overrun of about 1.2 million hours when it was finally complete. The first production unit, the next unit in flow, known as production 1 or P–1, was 17 percent complete, but had expended, much like the first airplane, almost twice as much money as it had in percent of com-

pleteness, and therefore we assumed or we extrapolated from that that the operating plan for completion of that aircraft would probably be overrun by three quarters of a million man-hours at completion.

These estimates extrapolated through the first seven aircraft using a 75 percent learning curve, which is a fairly nominal industry standard, indicated an overrun potential of about 6 million man-hours at completion, or $385 million on those aircraft.

These forecasts excluded the static and durability test units which would have added to that overrun. We just didn't have the data to work with them at that time.

The results of all three of these reviews were send to my superior, Mr. Bibee, by memorandum, and they are included today as part of my full statement.

During this time period, a retired fiscal vice president at Douglas had been hired to help the company develop the financial data needed to produce subsequent years' bidding rates for submittal to and approval of the government. The quality of the financial data flowing into this effort from the various program offices was so bad that this vice president took his concerns to the senior management council that met every evening at about 4:30 to ask for an independent review of all estimates. A group of financial experts from St. Louis, the corporate offices in St. Louis, were brought in to conduct the review. Their review was completed and findings presented in the first week of May 1990.

They concluded that all three programs had major cost and schedule problems, and would have serious negative cash-flow consequences, which was pretty important then. I had a chance to read their findings after having been interviewed by them and so forth. I was not allowed to keep a copy.

Now, interestingly enough, during this same period, this late April/early May 1990 time period, the C–17 program manager, the C–17 business manager and the fiscal vice president, Mr. Bibee, were relieved. The deputy president, Mr. Capellupo, was named the new C–17 program manager. A corporate review team member was named the new C–17 business manager. And Mr. Bibee was replaced by Mr. Pirkle, who had been vice president of product center operations at Douglas, which is the parts manufacturing end of the business.

In early May 1990, the C–17 business manager and my group were directed by Mr. Pirkle to do a complete reestimate of the C–17 program costs. This was done, and the results were put on a recap dated May 18, 1990. That recap, which is part of my full statement, indicated much higher estimates for the 2108 contract estimates at completion than had been formerly recognized at any time prior to that.

And just briefly, to give you an idea what they were, the C–17 estimate at completion done by the fiscal people from the C–17 program office came out to $7.7 billion at completion, again, for the 2108 contract.

The company fiscal estimate came out to $8.6 billion. And then we were asked to get together prior to a meeting with management on the future on this subject, work out a consensus on what both groups could agree to as a possible estimate at completion without

giving away your total integrity on the thing. That consensus figure—again, now, this was the amalgamation of the C–17 people and the fiscal people—came out to $8.2 billion.

These data were reviewed with Pirkle, Capellupo, and other senior management personnel during the next several weeks. The decision was made to cut back all C–17 costs, primarily labor, and to budget all remaining costs to stay within the $6.461 billion estimate at completion.

Now, that level is important because that is the level they had been using in their financial statements up to and through the second quarter of 1990 for the C–17 2108 contracts at completion.

Direct actions were initiated in late May to quantify the required reductions in force and set a timetable for execution. I believe everybody in this room knows that the ensuing labor force reductions are now a matter in the public record.

I was not present at any discussions as to how the company intended to treat the impact of these higher estimates in the various financial reports required by law, nor do I know what they intended to disclose to the U.S. Air Force or the DPRO, if anything.

However, experienced aerospace cost analysts would have seen the near impossibility of achieving the $6.461 estimate of completion. The remaining work left to complete that contract would have required productivity more than twice that of previously completed labor effort.

A little parenthetically here, that is what I call a con job, and we used to get that quite often at Douglas from the doing functions.

In assembly, for example, 1.65 hours or 99 minutes had actually been spent for each completed budget hour through the end of May. To meet the assembly hours, the remaining assembly hours and stay within the $6.461 billion budget, only seven-tenths of an hour or 42 minutes could be spent on each remaining budget hour. So it is 42 minutes left to spend versus 99 having actually been spent.

The interesting thing about that is that all past assembly cost history at Douglas clearly showed that the further an airplane progresses toward completion, actual man-hours spent are less cost productive, not more.

McDonnell Douglas knew or should have known of the inadequacy of the $6.461 billion estimate at completion use for the second quarter of 1990 financial statements. Their cost savings initiatives notwithstanding, no well-run aerospace company could have attained the production learning curves assumed in that estimate, let alone McDonnell Douglas.

And finally, I have never testified to Congress before, nor do I find any real delight in doing so today. My appearance is solely as an American who has witnessed with contempt the arrogant, incompetent, and unethical management of the McDonnell Douglas Co. during the 1988–90 time period. Their breaches of fiduciary responsibility for honest financial reporting to both the general investing public and tax-supported agencies such as the Department of Defense should not go uncensured.

I should be glad to take any questions that you may have.

[The prepared statement of Mr. Jenne follows:]

March 17, 1993

Statement of William E. Jenne

Thank you for asking me to appear before this committee today on the subject of the situation at the Douglas Company in the first half of 1990. I will make a brief opening statement and ask that my full statement be included in the record.

I retired from the McDonnell Douglas Corporation in June, 1988 with 27 years service. My experience was mostly with Douglas, Long Beach predominantly in the fields of cost estimating, pricing, cost control, scheduling and program planning and evaluation.

While an employe, I held various positions such as the Director of Operations Control, Director of DC-10 Program Planning and Control, Director of Major Subcontracts and Director of MD-11 Operations Control.

When I left in June, 1988, the company had very serious cost and schedule problems. The T-45 Navy trainer was overrun and behind schedule. C-17 engineering drawing releases averaged 6 to 9 months late to schedule. MD-11 critical machined parts were forecasted to be over 36 weeks late to their sheduled assembly start dates and all program fabrication parts were 10 weeks behind schedule. MD-80 assembly hours per airplane had almost doubled compared to the same effort's cost in 1985.

In January, 1990 I went back to Douglas on a contract basis as a consultant to Mr. R. A. Bibee the then Vice-President of Fiscal. My job assignment was to develop an independent cost estimating and pricing function reporting to Mr. Bibee. He was concerned about the quality and accuracy of the financial forecasts and cost of sales estimates provided by the various program offices for use in the financial statements.

Once the function was organized and staffed we began to look into the cost and schedule status of the MD-80, MD-11 and the C-17.

The MD-11 assembly cost and schedule status was the first review. In summary, we found that the 1990 Operating Plan EAC's were already overrun on 4 airplanes in process and the others in process would greatly exceed the planned learning curves. The review results indicated a potential overrun on the first 50 aircraft of $ 486.7 Million and another $ 675.3 Million on the following 251 units.

The next review was the MD-80 assembly with similar results. The program was 1 1/2 months behind schedule. Only 1 airplane delivered in January, 1990 versus 11 scheduled. All airplanes delivered through March, 1990 had overrun the Operating Plan assembly budgets by 15.3 % on average. This program was supposed to be the cash cow in 1990.

On April 19, 1990 we completed a review of the C-17 assembly manhours for units then in process. Our analysis showed that the first airplane (T1) was 35 % complete, had expended 62.2 % of the 1990 Operating plan EAC and would most probably overrun by 1.242 Million manhours, at completion. The first production unit (P1) was 17.0 % complete, had expended 33.2 % of the Operating Plan EAC and would probably overrun by 755 K manhours at completion.

These estimates extrapolated thru the first 7 aircraft using a 75 % learning curve indicated an overrun of 5.9 Million manhours at completion That totaled about $ 385 Million. These forecasts excluded the static and durability test units which would add to the overrun.

The results of all three reviews were sent to Mr. Bibee by memo and are included today as a part of my full statement.

During this same timeperiod, a retired fiscal VP had been hired to help develop the financial data needed to produce subsequent years bidding rates for submittal and approval to the DoD. The quality of the financial data flowing into this effort from the various program offices was so bad that the VP took his concerns to the senior management council to ask for an independent review of all estimates. A group of financial experts from the Corporate Offices were brought in to conduct the review. Their review was completed and findings presented in the first week of May, 1990

They concluded all three programs had major cost and schedule problems and would have serious negative cash flow consequences. I read their findings but was not allowed to keep a copy.

During this period, the C-17 program manager, the business manager and Mr. Bibee were relieved. The Deputy President, Mr. Capellupo was named the new program manager. A corporate review team member was named the new business manager. Bibee was replaced by Mr. Pirkle, VP Product Center Operations, which was parts fabrication.

In early May, 1990 the C-17 business manager and my group were directed by Mr. Pirkle to do a complete reestimate of the C-17 program costs. This was done and the results recapped on May 18, 1990. The recap, which is a part of my full statement, indicated much higher estimates for the 2108 contract EAC's than had been formally recognized.

The EAC comparisons briefly, were :

1. December Plan (Comprehensive EAC) $ 6.468 B
2. C-17 Plan (Program Office Plan) $ 7.692 B
3. Fiscal $ 8.640 B
4. Consensus $ 8.197 B
5. 2.76 % Plan (used for accruing profit) $ 6.461 B

These data were reviewed with Pirkle, Capellupo and other senior management personnel during the next several weeks. A decision was made to cut back all C-17 costs, primarily labor and to budget all remaining costs to stay within the $ 6.461 Billion estimate at completion, i.e. the 2.76 % total. Direct actions were initiated in late May to quantify the required reductions in force and set a time table for execution. The ensuing labor force reductions are now a matter of public record.

I was not present at any discussions as to how the company intended to treat the impact of these higher estimates in the various financial reports required by law. Nor do I know what they intended to disclose to the USAF or the DPRO, if anything.

However, experienced aerospace cost analysts would have seen the near impossibility of achieving the $ 6.461 EAC. The remaining work would have required productivity more than twice that of previously completed labor effort. That's what I call a real con job, not untypical at MDC.

In assembly for example, 1.65 hours or 99 minutes had actually been spent for each completed budget hour, cumulatively through May, 1990. To meet the assembly manhours in the $ 6.461 Billion estimate, only .7 of an hour or 42 minutes could be spent to complete each remaining budget hour. All assembly cost history at Douglas clearly showed that the further an airplane progressed towards completion, actual manhours spent were less cost productive, not more.

McDonnell Douglas knew or should have known of the inadequacies of the $ 6.461 Billion EAC used for the second quarter, 1990 financial statements. Their cost saving initiatives notwithstanding, no well run aerospace company could have attained the production learning curves assumed in that estimate, let alone McDonnell Douglas.

My appearance here today is solely as an American who has witnessed with contempt and disgust the arrogant, incompetent and unethical management of the McDonnell company during the 1988 -- 1990 timeperiod.

Their breaches of fiduciary responsibility for honest financial reporting to both the general investing public and tax supported agencies such as the Department of Defense should not go uncensored.

Some will fault me for a lack of loyalty to McDonnell Douglas with my testimony here today. But, in October, 1992 McDonnell Douglas reneged on their long standing promise to provide lifetime healthcare benefits to their retiree's. That recission ended any prior loyalty or ethical reservations I might have held regarding an appearance before this or any other investigative committee.

Curiously, the amount of money McDonnell chose NOT to provide for continued retiree healthcare benefits is about equal to that which they have mismanaged and will lose on the C-17 program.

I shall be glad to take any questions you may have.

LEGAL PRIVILEGED

MDC SENSITIVE
C-17 PRELIMINARY ANALYSIS
FSD, FY88, FY89

18 May 1990

	4-30-90 ACTUALS (000)	DEC PLAN		C17 PLAN		FISCAL		CONSENSUS		2.76% PLAN	
HOURS (000)		ETC	EAC	ETC	EAC	ETC	EAC	ETC	EAC	ETC	EAC
PRODUCTION	4,888	6,663	11,551	12,374	17,262	14,450	19,338	11,533	16,421	3,205	8,093
PROD. DEF.	26,502	8,787	35,289	8,803	35,305	15,270	41,772	13,531	40,033	3,853	30,355
LAB/FT	3,199	4,274	7,473	4,274	7,473	6,889	10,088	5,789	8,988	1,907	5,106
PCO	6,501	3,035	9,536	3,641	10,142	6,257	12,758	4,947	11,448	1,748	8,249
QA	1,260	1,201	2,461	2,009	3,269	2,902	4,162	2,436	3,696	464	1,724
ILS	2,086	2,375	4,461	2,317	4,403	2,356	4,442	2,356	4,442	1,112	3,198
OTHER	181	–	181	–	181	144	325	144	325	–	181
TOTAL HOURS	44,617	26,335	70,952	33,418	78,035	48,268	92,885	40,736	85,353	12,289	56,906
DOLLARS (000 000)											
LABOR & REL. COSTS	$2.549	$1.446	$3.995	$1.993	$4.542	$2.941	$5.490	$2.498	$5.047	$ 762	$3.311
PROCUREMENT	1.050	1.423	2.473	2.250	3.300	2.250	3.300	2.250	3.300	2.250	3.300
TOTAL COST	$3.599	$2.869	$6.468	$4.243	$7.842	$5.191	$8.790	$4.748	$8.347	$3.012	$6.611
O/H ADJ	–	–	–	-150	-150	-150	-150	-150	-150	-150	-150
TOTAL	$3.599	$2.869	$6.468	$4.093	$7.692	$5.041	$8.640	$4.598	$8.197	$2.862	$6.461

5W 8251 RFD

JENNE (2)

MEMORANDUM

April 12, 1990
C1-006-WEJ-90-12

TO: R. A. Bibee, C1-006

FROM: W. E. Jenne, C1-006 (18A-21)

SUBJECT: MD-11 ASSEMBLY MANHOURS

COPIES TO: J. J. Mangan, C1-006, File

This G-31 Project Team progress report will focus on the results of an assignment given to Ron Stark and Tom Elstran regarding the status and unit costs occurring on the MD-11 assembly project, and how they compare to the Operating Plan and to Pricing's estimates.

The attachments include an individual unit Log-Log graph, a tabulation of actuals, percent complete and projected EAC's and another tabulation depicting the cumulative variance in manhours between the estimates at completion and the VBU 1990 Operating Plan, through 301 airplanes.

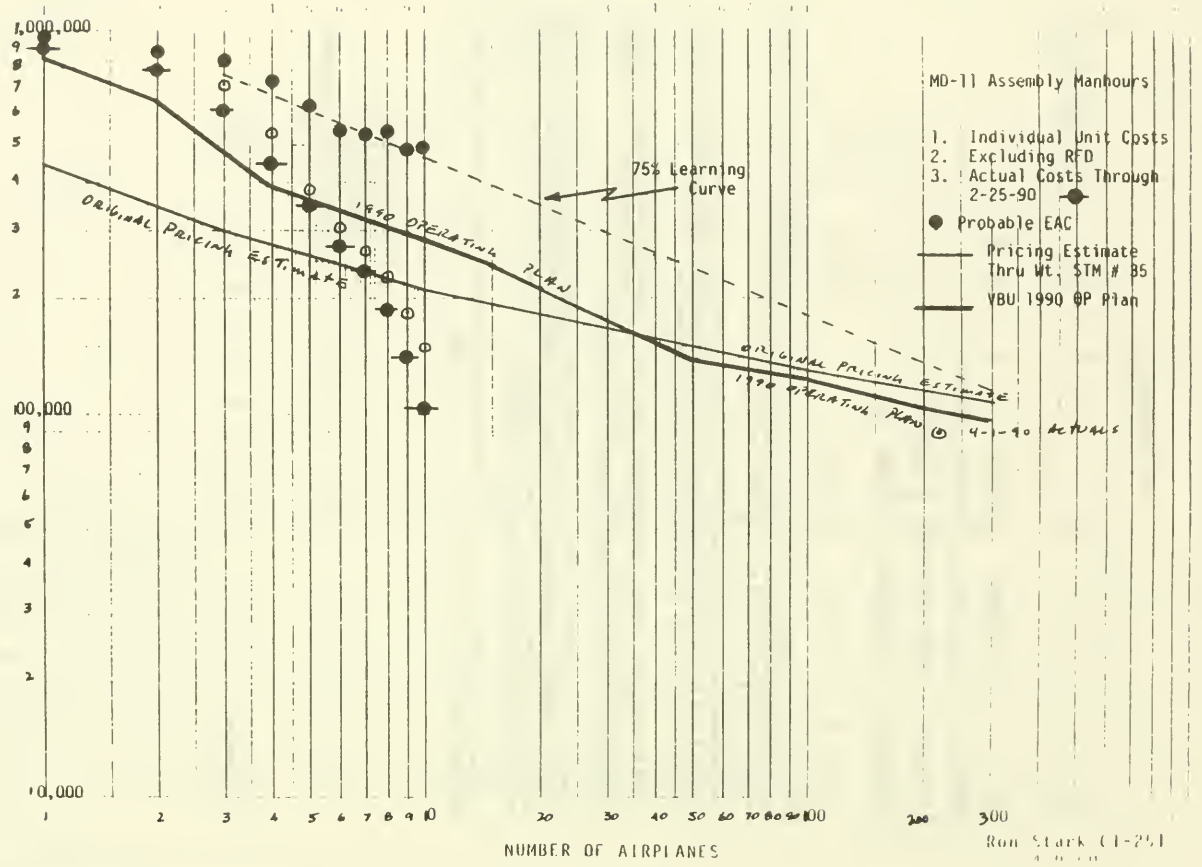
As can be seen on the Log-Log, actual manhours on the first 4 aircraft have exceeded the operating plan estimates. In addition, actuals on 5 through 10, while below the OP plan unit manhours, are not completed and when projected to completion show a significant deviation to plan.

Assuming we can produce a doable schedule consistent with completed engineering, improved parts availability and supplier on-time deliveries plus reaching the production rate peak sometime in late 1991, we should be able to achieve at least a 75% learning curve for units 11 through 301. But even that curve would leave us considerably above the operating plan, cumulatively.

Next week, I am hopeful the project team will have completed this same kind of analysis on the MD-11 fabrication manhours.

W. E. Jenne
Staff Specialist
Support & Plans Integration

Attachments (3)


MD-11 Assembly Manhours
1. Individual Unit Costs
2. Excluding RFD
3. Actual Costs Through 2-25-90
Probable EAC
Pricing Estimate Thru Wt. STM # 85
VBU 1990 OP Plan
75% Learning Curve
ORIGINAL PRICING ESTIMATE
1990 OPERATING PLAN
ORIGINAL PRICING ESTIMATE
1990 OPERATING PLAN
4-1-90 ACTUALS
1,000,000
100,000
10,000
1 2 3 4 5 6 7 8 9 10 20 30 40 50 60 70 80 90 100 200 300
NUMBER OF AIRPLANES
Ron Stark (T-25)

Attachment 2

MC-11 ASSEMBLY PROJECT

PROBABLE ESTIMATES AT COMPLETION
IN MANHOURS

Airplane Number	A-12 Actuals 2-25-90	A-12 4-1-90	MALP % Compl. 2-25-90	4-1	2-25-90 EAC	4-1-9 EAC
1	902.204	903.340	94.3	94.9	956.738	903,3
2	789.793	796. 747	89.8	100.0	879.502	796,7
3	619.454	712,693	73.9	82.1	838.233	868,0
4	450.510	531, 326	61.4	67.5	733.730	783,0
5	348.639	358,547	55.2	56.3	631.592	666,4
6	276.881	302.074	50.8	53.1	545.041	568,8
7	235.474	263. 760	44.0	49.5	535.168	532,3
8	186.802	225,584	34.5	44.9	541.455	510,2
9	140.542	181, 497	28.8	36.6	487.993	495,9
10	104.352	146. 970	21.2	30.5	492.226	490.0

Please Note:

1. An airplane less than 50% complete is less likely to end up where a straight extrapolation is used.

2. History on both the MD-80 and MD-11 indicates that as an airplane proceeds from say 20% complete to 100%, the extrapolated EAC from 20% complete tends to rise.

3. All of the above EAC's are straight extrapolations without allowance for the phenomenon in 2 above.

Apl # 2 FLEW 3-1-90

Attachment 3

MD-11 ASSEMBLY PROJECT

CUMULATIVE MANHOUR VARIANCE
PROBABLE EAC'S VERSUS 1990 OP PLAN
ONE THROUGH 301 AIRCRAFT

Aircraft Numbers	Avg. EAC Unit Hours	In (000's) of Manhours Avg. OP Plan Unit Hours	Avg. Overrun To OP Plan	Cum Total Overrun To OP Plan
1	957	841	116	116
2	880	660	220	336
3	838	481	357	693
4	734	410	324	1,017
5	632	360	272	1,289
6	545	340	205	1,494
7	535	323	212	1,706
8	541	310	231	1,937
9	488	297	191	2,128
10	492	288	204	2,332
11-15	415	261	154	3,102
16-20	363	224	139	3,797
21-50	275	163	112	7,157
51-100	203	129	74	10,857
101-301	136	105	31	17,088

	MANHOURS OVERRUN	AT COMPOSITE MFG. RATE	DOLLARS OVERRUN
1-10	2,332.000	68.00/HOUR	$ 158.6 M
11-15	770.000	"	52.4 M
16-20	695.000	"	47.3 M
21-50	3.360.000	"	228.5 M
51-100	3.700.000	"	251.6 M
101-301	6.231.000	"	423.7 M
	17.088.000		~~$ 1,210.0 M~~
			$ 1,162.0 M

MEMORANDUM

April 18, 1990
C1-006-WEJ-90-13

TO: R. A. Bibee, C1-006

FROM: W. E. Jenne, C1-006 (18A-21)

SUBJECT: MD-80 ASSEMBLY ACTUAL HOURS

COPIES TO: J. J. Mangan, C1-006, File

The following data represents the A-12 actual assembly manhours for MD-80's delivered through March, 1990 (2 kits excluded) compared to the 1990 OP Plan:

Fuse No.	Cum MD-80	Customer	Delivery Month	Manhours 4-01-90	EAC'S In 1990 OP Plan
1,668	692	ILFC	Feb.	90,013	86,000
1,674	698	Midway	Jan.	103,286	
1,675	699	Egypt	Feb.	109,491	
1,676	700	Delta	Feb.	110,242	
1,677	701	Delta	Feb.	114,035	
1,678	702	Iberia	Mar.	119,070	
1,679	703	Delta	Feb.	112,165	
1,680	704	Finnair	Feb.	111,631	
1,681	705	Austrian	Mar.	113,387	
1,682	706	Austrian	Mar.	108,360	
1,683	707	Delta	Mar.	110,196	
1,685	709	Delta	Mar.	102,627	
1,686	710	American	Mar.	92,511	
1,687	711	Egypt	Mar.	95,413	
1,689	713	Delta	Mar.	95,516	
1,691	715	Delta	Mar.	94,407	
1,692	716	Austrian	Mar.	92,594	
1,693	717	SAS	Mar.	90,052	
1,694	718	American	Mar.	86,296	
1,695	719	American	Mar.	84,429	
1,696	720	American	Mar.	82,096	
1,697	721	American	Mar.	81,344	
1,698	722	American	Mar.	82,912	86,000
Totals			23	2,282,073	1,978,000

W. E. Jenne
Staff Specialist
Support & Plans Integration

William E. Jenne
RECEIVED
APR 20 1990
R.A. BIBEE

R33180
18A-21

4-20-90

DICK,

GERRY STAFFIERI AND I WILL BE DISCUSSING THIS WITH MAGUIRE NEXT WEEK & PRIOR TO IT'S BEING SENT TO YOU FORMALLY. BUT, I THINK YOU NEED TO LOOK NOW. IF ANYTHING CHANGES AFTER OUR DISCUSSION WITH MAGUIRE. I'LL REVISE ACCORDINGLY.

THANKS BILL
GOOD JOB!
JOE

Joe Parks
Dept of Energy

MEMORANDUM

April 19, 1990
C1-006-WEJ-90-14

TO: R. A. Bibee, C1-006

FROM: W. E. Jenne, C1-006 (18A-21)

RECEIVED
APR 20 1990
G. D. STAFFIERI

SUBJECT: C-17 ASSEMBLY MANHOURS AND STATUS

COPIES TO: T. J. Maguire, C1-AEO 217A-430
J. J. Mangan, C1-006 18A-25
G. D. Staffieri, C1-006 18A-25

Following through on our 4/17/90 conversation regarding the C-17 assembly man-hours and status. The following is an analysis of the situation and projection of possible consequences should the current performance continue.

First, some basic facts:

1. 1990 OP Plan estimates at completion:

a. t1 Airplane	1,600,000 Manhours
b. p1 Airplane (first production)	1,350,000 Manhours

2. Actual cost through 4/1/90 (A-12):

a. t1 Airplane	994,632 Manhours
b. p1 Airplane	447,979 Manhours

3. Percent complete through 4/1/90 (MALP):

a. t1 Airplane	21.2%
b. p1 Airplane	11.8%

4. Projected estimates at completion:

a. t1 Airplane	4,691,600 Man-hours
b. p1 Airplane	3,796,400 Man-hours

Several questions need to be adequately addressed:

1. Are the credit hour completions and hence percent complete data, as reported in MALP, correct?

2. If so, what long term implications are involved should these present performance trends continue?

Last Monday, I took a two hour walk through of the assembly areas in Bldg. 54, mainly to see for myself how the first airplane was physically progressing and secondly to determine whether standard hour credits were being recorded as completed.

The airplane fuselage heavy structure sections were joined together and the wing was in place over the fuselage, but not lowered onto the fuselage for joining. The leading edges were not on the airplane, nor the pylons, nor the vertical tail, nor the big cargo ramp, nor the fillets to fair the wing with the center fuselage.

Many areas of the fuselage sections and the wing had tags on them. The wing box for example had quite a few due to oversize holes and waiting for the right size oversize fasteners to arrive.

There were no electrical, plumbing or interior installations evident in the airplane at all. Many areas of the fuselage sections were not permanently fastened but were held together with cleco's. In summary, the airplane looks like a shell.

Notwithstanding the above, my view is that the airplane is further along in percent complete than is reported in MALP. Towards that conclusion, I discussed how credit hours were taken and when they were recorded in MALP with the group leader of Wing Half Join. He said that the AO's were broken down into small increments of work and that his personnel took credit for work completed on those as they were bought off by Quality. The major problems he had in credit completions were part shortages, oversize holes, tags, lack of completed fillet work, no fixed leading edges, etc.

I would estimate that the first airplane is more nearly 30 to 35% complete rather than 21.2% as reported in MALP on 4/1/90. Based on a 35% complete status, the question now is how would that level of projected cost affect the 6 production units we now have under contract as well as the 4 additional units now being proposed to the Air Force for the FY 1990 buy?

DAC currently has one prototype (T1) airplane and 6 production aircraft under contract. All are fixed price incentive with a ceiling of 30% over cost with an 80% - 20% share provision. The follow-on 4 aircraft now being proposed are the FY 90 buy. My understanding is that they will also be subject to the same contract provisions, subject to negotiations scheduled to start on July 1, 1990.

The attached unit cost Log-Log graph depicts, on a comparative basis, the following:

1. The 1990 OP Plan

2. Projected unit EAC's assuming the t1 airplane is 35% complete as of 4/1/90 and a 75% learning curve

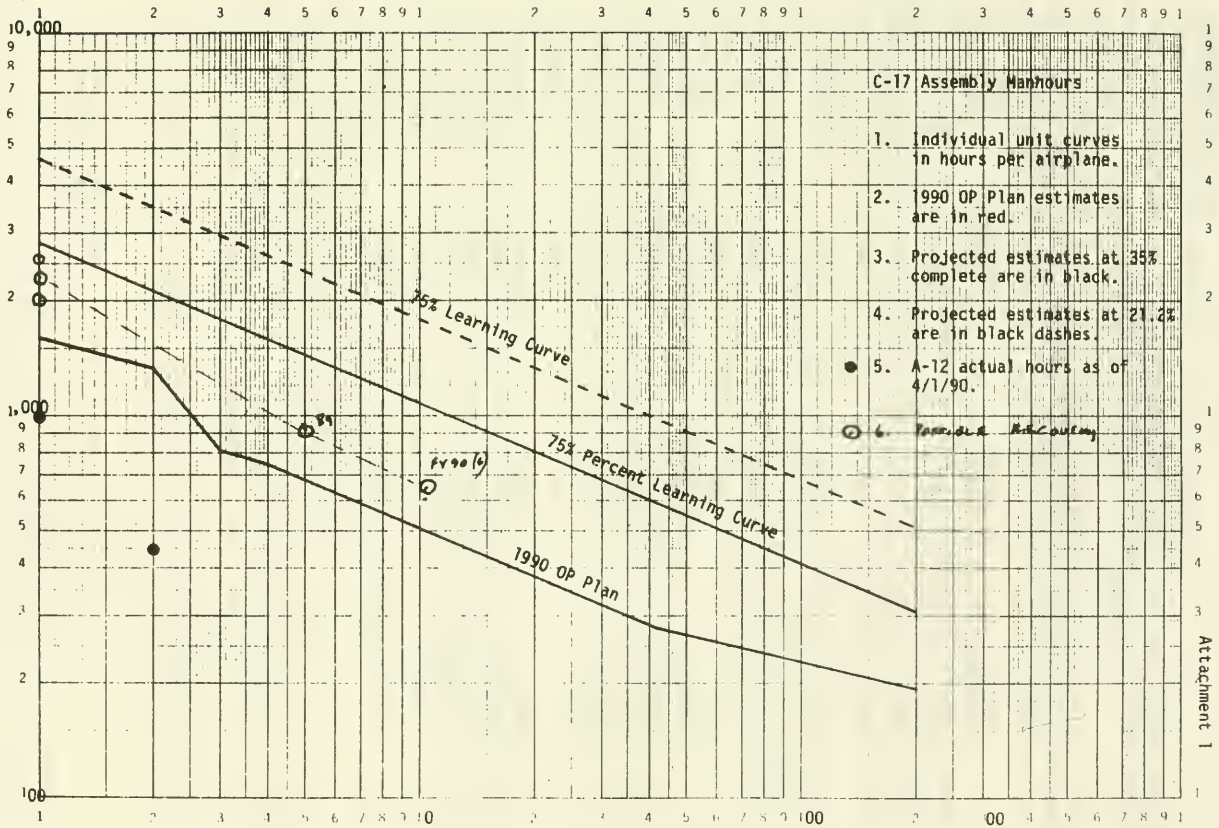
3. Projected unit EAC's assuming the t1 airplane is only 21.2% complete as reported in MALP on 4/1/90

Attachment 2 depicts the potential cumulative assembly man-hour overrun to the OP Plan if either the 35% complete case or the 21.2% case happens, through the first 11 aircraft (t1 and 10 production follow-ons).

We need to reach a conservative consensus as to the most probable estimates at completion, including an audit of MALP percent complete methodology and accuracy. Then, we need to develop a detailed recovery plan to improve. Failing that, we must determine whether or not it is economically sound to continue with the C-17 program beyond the current 6 firm aircraft without a price increase consistent with our costs.

W. E. Jenne
Staff Specialist
Support & Plans Integration

Attachments (2)


HRS
IN
(000'S)
K+E LOGARITHMIC
KEUFFEL & ESSER CO
46 7320
C-17 Assembly Manhours
1. Individual unit curves in hours per airplane.
2. 1990 OP Plan estimates are in red.
3. Projected estimates at 35% complete are in black.
4. Projected estimates at 21.2% are in black dashes.
5. A-12 actual hours as of 4/1/90.
6. Tooling & Mfg Overlay
75% Learning Curve
75% Percent Learning Curve
1990 OP Plan
FY90 14
89
10,000
1,000
100
1
10
100
NUMBER OF AIRCRAFT
W. E. Jenne
4/19/90

Attachment 2

C-17 ASSEMBLY PROJECT
CUMULATIVE MANHOUR VARIANCE
1990 OP PLAN VERSUS TWO COMPLETION CASES

MANHOURS IN (000'S)

Aircraft Number	OP Plan EAC'S	35%Comp Case EAC's	21.2% Comp Case EAC's
t 1	1,600	2,842	4,692
p 1	1,340	2,105	3,500
p 2	810	1,790	2,950
p 3	750	1,595	2,630
p 4	680	1,445	2,395
p 5	630	1,330	2,200
p 6	590	1,250	2,080
Total Firm	6,400	12,357	20,447
Firm Variance	N/A	5,957	14,047
p 7	555	1,190	1,975
p 8	530	1,120	1,870
p 9	508	1,085	1,795
p10	490	1,040	1,700
FY 90 Buy	2,083	4,435	7,340
FY 90 Variance	N/A	2,352	5,257
Grand Total	8,483	16,792	27,787
Grand Total Variance	N/A	8,309	19,304

Mr. CONYERS. Thank you, Mr. Jenne, for your statement.

Mr. McCandless.

Mr. MCCANDLESS. Thank you, Mr. Chairman.

Mr. Jenne, I feel a need to ask this, and it is not meant to be derogatory, but why are you appearing to testify today? What motivation do you have for this?

Mr. JENNE. Well, I think I stated it in the final few paragraphs. Notwithstanding I have been a McDonnell Douglas employee and so forth, I am an American, I am a taxpayer, and I felt like appearing.

Mr. MCCANDLESS. Thank you. I appreciate your answer.

In your statement, you indicate that any experienced and knowledgeable aerospace engineer would have seen the impossibility of meeting McDonnell's projected 65 percent learning curve. What was the C–17's actual learning curve in the spring of 1990, in your estimation?

Mr. JENNE. You had airplanes in process. The T–1 airplane, the next one coming was the P–1 airplane, first production airplane. Then you had a static and durability right thereafter. None of those were complete. So you had no established actual learning curve yet.

The one we used for projection purposes was a 75 percent learning curve. It assumed an estimate of completion at T–1 of 3 million man-hours, and then for every unit doubled as you come down that learning curve, that doubled unit would be 75 percent of the unit it was doubled from. That is what you mean by a 75 percent learning curve.

I will give you an example. If T–1 were 100 hours, a doubled unit from one then is two. Then two would be 75 percent of the first airplane, T–1, 75 percent of 100 hours, making it a 75-hour airplane. Then number 4 would be 75 percent of number 2. Number 8 would be 75 percent of number 4. Simplistically, that is what a learning 75 percent is.

So we assumed a 75 percent slope on our estimates that went into the $8.6 billion estimate at completion.

Mr. MCCANDLESS. Your statement includes a May 9 C–17 assembly man-hour status report. That chart provides figures showing budgeted assembly hours, projected hours, and EAC, and the number and percent of actual hours spent on production as of May 1990.

For somebody like myself, what do these numbers mean and how do they show an impossible, unrealistic assembly schedule for the C–17?

Mr. JENNE. Sir, are you referring to this chart?

Mr. MCCANDLESS. Yes.

Mr. JENNE. OK. The importance of this document is, it was the first status sheet published by the management on the C–17 program after we had received instructions to rebudget everything and not go above the $6.4 billion level.

[The information follows:]

C-17
ASSEMBLY MANHOURS STATUS - 27 MAY 1990

	Unit	Budgeted Hours-Note (2)	Actual Hours	Percent (%) Spent	Percent Complete	Projected Hours Est. At Complete
1	T-1	2,000,000	1,221,640	61.1%	40.2%	3,038,906
2	P-1	1,331,000	617,180	46.4%	26.5%	2,328,981
3	STATIC	626,000	230,019	36.7%	15.8%	1,455,817
4	DURA	548,000	85,852	15.7%	6.5%	N/A
5	P-2	775,000	17,322	2.2%	1.4%	N/A

NOTES

(1) Assembly hours - Analog 12 Level

(2) Budget to Production Assembly based on May, 1990, Hayden re-baseline budget

W.D. Smith, ext. 7-5963
05 June 90

Mr. JENNE. The man-hours in the first column, called budgeted hours note 2, are the budget to production assembly based on the May 1990, baseline budget. That is exactly what I meant when I said everything had to be redone for the $6.4 billion estimate level.

So these were the estimates at completion for the first aircraft, first production aircraft, static unit, durability unit, and the second production unit.

The next column speaks of actual hours. Now, those are the actual hours incurred cumulatively through the end of May 1990, on each of those airplanes as shown.

The next column is percent spent. And that simply is taking the actual hours—let's take T–1 there as an example, of 1,221,000 hours and dividing it by the 2 million budget man-hours at completion, you get 61 percent. So you know what percent you have spent of your budget.

The clincher, though, comes in the fourth column called percent complete. Now, that percent complete is based on the engineered time standard value for all of the work to build any one of these airplanes divided into completed time standards. As the work progresses and the workers get the standard hours cleared through quality inspection they are what we call bought off and aggregated so that out of, say, 100,000 standard hours at completion, if they have completed 40,000 standard hours—that divided by a 100,000 standard hour airplane, would be 40 percent complete.

Now, when you are—this gets into a poor situation, when you are 60 percent expended, and only 40 percent complete, as measured against the new budgets that had to be met to make the company's estimate, a straight-line extrapolation simply taking your actual hours to date divided by the percent complete gives you the last column on the right-hand side, i.e., the projected hours estimate at completion.

And if you look at that and compare it to the first column, you can see the makings of a huge overrun, and a huge overrun beyond the newly directed $6.4 total, which we find later is used in their financial reporting level.

So that is what I mean. This was the kind of data that clearly indicated the amount of improvement you had to make on the work remaining and the probable prospect that you weren't going to make it at all. The curve is too steep.

On almost every airplane we have ever built at Douglas, the assembly on those airplanes gets less productive the further you go through to completion. So all the things we had experienced in history in the past said, you can't do that.

Mr. MCCANDLESS. It gets less productive the further you go into completion in terms of the total cost per unit?

Mr. JENNE. Yes. Suppose you are 50 percent complete and you are spending 1 actual hour for standard hour. But productivity begins to drop when you get 75 percent complete and ultimately 100, because when you are 100 percent complete, everything has got to be done. There has no more tags. There are no more part shortages. Everything has got to be done. So far that one final standard hour to get you to 100 percent complete, rather than spending 1 further hour, you might spend 1.1 or 1.15.

Mr. MCCANDLESS. Go back and find the pink wire that is shorted out, that kind of thing?

Mr. JENNE. Yes. But rarely, almost never would you find that 1 hour being done for seven-tenths or one-half. That is bushy-tailed dreaming.

Mr. MCCANDLESS. Who at McDonnell Douglas was aware of your May 1990 C–17 work estimate, and to the best of your knowledge, how was that report used?

Mr. JENNE. The senior management people that I dealt with with that May 18 estimate were Pirkle, who was then the vice president of finance, and Capellupo, the deputy president and the C–17 program manager, newly appointed, and a fellow named Jack Haden, who was the deputy C–17 program manager. Those three people. And we met individually and collectively two or three times after the creation of the May 18 estimates.

Mr. MCCANDLESS. I am going to ask you a question that is somewhat related, but it keeps coming back to me. From its concept to its production date, the P–51 in World War II was 135 days. Concept to production. And we have all kinds of stories like that. And one would say, yes, but current planes and aerospace equipment is far more complex, and one would have to agree with that.

Conversely, you no longer use slide rules. You use computers, which also gives you an advantage in terms of number of man-hours to accomplish a given mathematical equation.

In your assessment of this, what is wrong with the system that we get bogged down like we have here, separate from what may or may not be legal or illegal payments, in getting something on line and getting it built?

Mr. JENNE. You are talking about the conduct of the management of the program, hopefully——

Mr. MCCANDLESS. I am talking about how to order something and get it produced.

Mr. JENNE. I will give you a couple of thoughts. No. 1, when you order something, don't order it from somebody that has got two other concurrent design, major design programs going on in the same plant at the same time. That is just bound to give you trouble.

No. 2, when you order something from somebody, make sure, I would suggest, make sure they have, one, a good, well-trained, well-experienced engineering department, and two, a proven record that they don't miss a drawing release schedule. If you can do that, if you can control those drawing release schedules, you have got a lot of the battle whipped.

If you can stay on schedule, you have got a dandy chance—barring some big technical thing that could come on—you have got a dandy chance of making your estimate. But you have no chance ever if you fall behind schedule. It just compounds to the next succeeding function like planning and material and fabrication, and it just gets worse and worse and worse, and it is like a whirlpool. The more you struggle, the worse it gets. You add more people, you add more overtime, you keep doing it and keep doing it until finally, you know, you are just broke.

So if you can control the front end of that schedule, almost ruthlessly, you have got an excellent chance.

The other point, don't put work in where they have got two other concurrent design programs.

Mr. McCANDLESS. OK. You may or may not want to answer this question. My understanding that the air bus 340 is going to give our current generation and next generation of American-made planes fits, separate from what allegedly is a subsidy support on the part of the governments because they are able to crank them out in a way with reduced numbers of man-hours per unit produced and so on and so forth.

Are we saying that the consortium that builds this plane is using what it is you have talked about to the maximum degree possible?

Mr. JENNE. Well, are you saying that you have heard that their man-hours will be lower than something we know about per unit? It is going to be a cheap airplane, or a short lead time, or both?

Mr. McCANDLESS. That there is greater efficiency in the production of their planes, or the latest generation of planes, than we are currently experiencing, and therefore they have not only possibly a subsidy edge from their governments, but also a production edge in terms of cost per unit.

Mr. JENNE. Well, I don't know what the facts are on that. But I would be surprised. The French, when we looked at them in the 1960's, on the Caravel, for example, their hours per pound to build an airplane were three times as high as ours, but the labor rate was three times less, so they had an advantage there.

I just don't know what the air bus factors are. But just knowing them from my previous experience, I would suspect they are not going to be cheaper. They certainly aren't going to be cheaper than Boeing. They may be cheaper than Douglas.

Mr. McCANDLESS. One more, if I may. There is a gentleman that is retired from the aerospace industry that has gathered around him a number of other gentlemen with many years of experience like yourself, and he created a company in California and has recently moved it to Ohio. There was an article in the Post this weekend about this gentleman, whose last name is Snowe.

The objective of this company is to build an air freighter. And they are talking about the success of this, centering around the fact that everybody involved has got 25 to 35 to 40 years experience in one of the leading manufacturers of airframes, and that they are not taking any salary, and that this is a labor of love, so to speak. They are going to be able to put these freighters out which are designed to take cargo containers, like those which come from ships, for something like $10 million a copy.

Now, if this gentleman has the experience that was reported and all of these people have all of the experience that was reported in terms of building planes, and you with your experience in building planes, is this a theoretically possible thing to do if the government stays out of it and doesn't get involved?

Mr. JENNE. I don't know about the government per se, but having experience you know is going to help. Having a small company is going to help. You are not loaded down with an inordinate amount of bureaucracy and staff people and human resources and big computing and all that. You just go get the job done. That always helps.

As a matter of fact, I thought you were going to talk about the company that McGowen, the ex-president of Douglas, had formed in the mid-1970's. I went to work for him for 7 years, reengining DC–8's that complied with stage-two noise levels. We had a great program going. I was a relative youngster. I think I was 50 when I started. The rest of them were, you know, 68, 69, ex-vice presidents, plant managers of the Douglas Co., Lockheed, we had well-experienced, well-educated fellows from aerospace manufacturers other—Rohr, which was very important. We did quite well. We didn't sell as many as we wanted, but the design was beautiful. We screwed up and put the work out to reengine the airplanes in Tulsa, McDonnell Douglas Tulsa, and that cost us all a lot.

But I think the thing you are describing, and I don't know about $10 million, but—can happen.

I have seen some wonderful things done with experienced people and damn small staffs and dedication. That counts a lot.

Mr. MCCANDLESS. Thank you very much for your testimony.

Thank you, Mr. Chairman, to all your patience.

Mr. CONYERS. Thank you very much for your questions.

Mr. Jenne, you are a great American, and we thank you for coming.

Any final observations, Mr. McCandless?

Mr. MCCANDLESS. No, thank you, Mr. Chairman.

Mr. CONYERS. I have a closing statement that I ask be inserted in the record.

[The prepared statement of Mr. Conyers follows:]

CLOSING STATEMENT

of

JOHN CONYERS JR.

CHAIRMAN

LEGISLATION AND NATIONAL SECURITY SUBCOMMITTEE

OVERSIGHT HEARING OF AIR FORCE C-17 AIRLIFTER

MARCH 17, 1993

IN THE LAST TWO YEARS, THIS SUBCOMMITTEE HAS UNCOVERED MAJOR DESIGN WEAKNESSES AND DEFICIENCIES WITH THE C-17 AIRCRAFT. IN ADDITION, WITH THE HELP OF THE DEPARTMENT OF DEFENSE INSPECTOR GENERAL, WE HAVE UNRAVELED AN EXTREMELY COMPLEX PLAN TO SECRETLY BAIL OUT THE MANUFACTURER, MCDONNELL DOUGLAS. HUNDREDS OF MILLIONS OF DOLLARS WERE IMPROPERLY, AND PERHAPS ILLEGALLY, PROVIDED TO MCDONNELL DOUGLAS DESPITE ADAMANT ASSURANCES BY THE DEPARTMENT OF DEFENSE AND THE AIR FORCE THAT THIS WAS NOT DONE.

WE NOW KNOW THAT --

- THE C-17 PROGRAM IS TECHNICALLY AND FINANCIALLY FLAWED.
- COSTS ARE OUT OF CONTROL, AND STILL ESCALATING WHILE EFFICIENCY IS DETERIORATING.
- SWORN STATEMENTS HAVE BEEN MADE TO THIS SUBCOMMITTEE THAT ARE CONTRARY TO THE EVIDENCE.

DESPITE THE PENTAGON'S ADAMANT CLAIMS THAT THERE WAS NO BAILOUT OF MCDONNEL DOUGLAS, THE DEPARTMENT OF DEFENSE INSPECTOR GENERAL TOLD US SQUARELY THE OPPOSITE. TODAY, WE HEARD THE DETAILS DIRECTLY FROM THE HEAD OF MCDONNELL DOUGLAS HIMSELF. UNFORTUNATELY, I DON'T THINK WE STILL KNOW

WHAT HAPPENED. SOME EVIDENCE MAKES IT APPEAR THAT IN OCTOBER OF 1990 JOHN MCDONNELL PERSONALLY DEMANDED HALF A BILLION DOLLARS OR THREATENED TO SHUT DOWN THE C-17 PROGRAM. TODAY'S TESTIMONY SEEMS TO DISPUTE THAT.

WE ALSO HAVE EVIDENCE THAT PENTAGON OFFICIALS, INCLUDING THREE AIR FORCE GENERALS AND AN ASSISTANT SECRETARY OF THE AIR FORCE, MOVED HUNDREDS OF MILLIONS OF DOLLARS TO MCDONNELL DOUGLAS IN ORDER TO SATISFY THE CORPORATION'S DEMAND AND AVOID AN EMBARRASSING SHUTDOWN OF THE PROGRAM. TO MAKE MATTERS WORSE, IT APPEARS THAT THE GENERALS INVOLVED ATTEMPTED TO INTIMIDATE THEIR SUBORDINATES WHO DID NOT WANT TO GO ALONG WITH THE PLAN. NEXT WEEK WE WILL HEAR DIRECTLY FROM THOSE OFFICIALS IN OUR ATTEMPT TO BRING SOME ACCOUNTABILITY TO THIS MESS.

THE PRESIDENT HAS ASKED THIS COUNTRY TO TAKE A NEW DIRECTION. FOR THE FIRST TIME IN MORE THAN A DECADE, WE ARE FACING OUR COUNTRY'S PROBLEMS. AT A TIME WHEN WE NEED DESPERATELY TO BECOME MORE COMPETITIVE, AND BECOME MORE EFFICIENT TO ENSURE THE JOBS OF OUR WORKERS AND ENSURE THE PROPER PLACE OF AMERICAN INDUSTRY IN THE GLOBAL MARKETS, THE AIR FORCE AND THE CORPORATE LEADERSHIP OF MCDONNELL DOUGLAS STILL DON'T SEEM TO UNDERSTAND THAT THE AMERICAN

TAXPAYER ARE ENTITLED TO FULL DISCLOSURE.

NO PROGRAM IS SO VALUABLE THAT IT IS ABOVE THE LAW, AND NO PROGRAM IS WORTH PAYING FOR WITH THE INTEGRITY OF THE ARMED SERVICES. NO PROGRAM IS SO IMPORTANT THAT IT CAN BE ALLOWED TO ENDANGER THE LIVES OF OUR TROOPS.

THE SUBCOMITTEE HEARINGS WILL CONTINUE NEXT WEEK, ON APRIL 29TH, AS WE CONTINUE OUR EFFORTS TO GET TO THE BOTTOM OF THE C-17 PROCUREMENT CRISIS.

Mr. CONYERS. We have been looking at this program for 2 years. We have found design weaknesses. And with the inspector general, we have unraveled a complex plan to bail out the manufacturer.

We know now that the C–17 program is technically flawed. We know now that its financing system is flawed. We know that costs are out of control and probably escalating. We suspect that efficiency is deteriorating. And we think that sworn statements made to this subcommittee may be contrary to the evidence. And therefore we are going to continue this hearing tomorrow morning at 10 a.m.

Thank you for coming. The subcommittee stands adjourned.

[Whereupon, at 1:20 p.m., the subcommittee adjourned, to reconvene Thursday, March 18, 1993.]

C–17 AIRLIFTER PROGRAM

THURSDAY, MARCH 18, 1993

HOUSE OF REPRESENTATIVES,
LEGISLATION AND NATIONAL SECURITY SUBCOMMITTEE
OF THE COMMITTEE ON GOVERNMENT OPERATIONS,
Washington, DC.

The subcommittee met, pursuant to notice, at 10 a.m., in room 2154, Rayburn House Office Building, Hon. John Conyers, Jr. (chairman of the subcommittee) presiding.

Members present: Representatives John Conyers, Jr., Carolyn B. Maloney, Corrine Brown, and Al McCandless.

Also present: Representative Stephen Horn.

Subcommittee staff present: Robert J. Kurz, deputy staff director; James Turner, associate counsel; Eric Thorson, professional staff member; Bennie B. Williams, clerk; and Monty Tripp, minority professional staff.

Full committee staff present: Julian Epstein, staff director.

Mr. CONYERS. The committee will come to order.

We continue hearings on the C–17, and today's witnesses from the GAO are Louis J. Rodrigues, Thomas Denomme, and John Stephenson.

Will you please stand and raise your right hand?

[Witnesses sworn.]

Mr. CONYERS. Let the record show that all the witnesses responded in the affirmative.

Director Rodrigues, you may begin. Your statement will be incorporated in its entirety in the record, as will all other witnesses' today. Welcome to the committee.

STATEMENT OF LOUIS J. RODRIGUES, DIRECTOR, SYSTEMS DEVELOPMENT AND PRODUCTION ISSUES, NATIONAL SECURITY AND INTERNATIONAL AFFAIRS DIVISION OF THE U.S. GENERAL ACCOUNTING OFFICE, ACCOMPANIED BY THOMAS DENOMME, ASSISTANT DIRECTOR; AND JOHN STEPHENSON, ASSISTANT DIRECTOR, DEFENSE AND SECURITY INFORMATION SYSTEMS, INFORMATION MANAGEMENT AND TECHNOLOGY DIVISION

Mr. RODRIGUES. Thank you, Mr. Chairman.

I would also like to make sure that the statement of Mr. Sam Bowlin of the Information Management Technology Division on the followup to our May 1992 report to this subcommittee on the C–17 software development programs would also be entered.

Mr. CONYERS. Without objection, so ordered.

[The prepared statement of Mr. Bowlin follows:]

United States General Accounting Office

GAO

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EMBEDDED COMPUTER SYSTEMS

Status of C-17 Software

Statement for the Record by
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GAO/T-IMTEC-93-2

Mr. Chairman and Members of the Subcommittee:

I am pleased to submit this statement for the record as part of the Subcommittee's hearings on the C-17 aircraft program. As you know, the C-17 will be the most computerized, software-intensive, transport aircraft ever built. Embedded computers are essential for the C-17 to accomplish its mission--the aircraft depends on these computers to control basic avionics functions such as flight control, communication, and instrument displays. The C-17 relies on 19 different types of embedded computers incorporating over 80 microprocessors and about 1.3 million lines of code. This statement provides information on the current status of embedded computer and software development for the C-17.

In summary, we have observed a pattern of the Air Force continuing to permit its prime contractor, McDonnell Douglas Corporation, to defer software development to future aircraft. Originally, the first aircraft (T-1), delivered in September 1991, was supposed to include all the software. But, McDonnell was unable to develop and deliver the software on time. Rather than slowing aircraft production until the software could be completed, McDonnell deferred software development, initially to the P-2 aircraft, then to the P-5 aircraft, and now to the P-6 and future aircraft. Each software development deferral further delays the Air Force's

ability to fully test the software and demonstrate that the C-17 can meet all of its requirements.

The Air Force is continuing to experience embedded computer and software development problems on the C-17 in three major areas. First, some critical software functions are either still being developed or are incompletely tested. Although McDonnell has made substantial progress in the past year, software immaturity still prevents the C-17 from meeting critical mission requirements and severely limits testing. Secondly, McDonnell continues to have problems in meeting reserve processing and memory capacity requirements. The C-17's embedded computers need this reserve capacity to service future growth, but the Air Force continues to waive these requirements to minimize schedule delays. Lastly, McDonnell has still not developed adequate system documentation, thereby jeopardizing the Air Force's ability to efficiently test, maintain, and upgrade C-17 computer systems.

BACKGROUND

In May 1992 we reported that the C-17 faced significant software development problems.[1] The Air Force made a number of major mistakes early in the program that affected its ability to manage and oversee software development. Air Force officials initially

[1]Embedded Computer Systems: Significant Software Problems on C-17 Must Be Addressed (GAO/IMTEC-92-48, May 7, 1992).

assumed that software was a low-risk part of the C-17 program and, therefore, did not adequately manage its software development. In addition, McDonnell and its subcontractors used software to solve several aircraft design and performance problems, further complicating the development effort. The Air Force also found that they lacked specific knowledge about software problems when they first occurred, and did not ensure that McDonnell took timely corrective action. Thus, we concluded that the C-17 program was a good example of how not to manage software development when procuring a major weapons system.

We also reported that because of problems and delays in developing and testing software and the lack of quality system documentation, McDonnell (with the Air Force's concurrence) took a number of shortcuts to minimize schedule delays. For example, McDonnell delayed the completion and installation of most mission-critical software functions, such as navigation and communications, until the second production aircraft (P-2)--the avionics test aircraft. According to the original C-17 full-scale development contract, the first test aircraft (T-1) was to include all of the software. The Air Force also "temporarily" waived reserve processing and memory capacity requirements for several of the most critical computers, including the mission computer and multifunction display, on the first five aircraft. Past experience on major Defense software development efforts clearly shows that taking shortcuts like these and not solving problems promptly greatly complicates and makes

more costly the effort required to make the software function correctly.

In our May report we endorsed Congressional direction that Defense perform and submit an independent "Early Operational Assessment" of the C-17's mission capabilities following completion of the first 50 hours of operational flight test. We also recommended that the Secretary of Defense expand this assessment to evaluate (1) the impact of software risks on the C-17 development and flight test program, and (2) Air Force plans to ensure adequate preparation and approval of software support documentation. As discussed below, Defense evaluated software deficiencies and documentation as part of its Early Operational Assessment.

EARLY OPERATIONAL ASSESSMENT

In its December 1992 Early Operational Assessment of the C-17, the Defense Director of Operational Test and Evaluation concluded that immature software has limited testing of the C-17's operational capabilities, such as flight controls, stall warning, communications, aerial delivery, and navigation. These software shortfalls are now affecting the C-17's readiness for operational testing, which was expected to start in September 1993. This testing has now been delayed until January 1994. In addition, the Director concluded that software documentation is not adequate, and without quality documentation, the Air Force's ability to carry out

its software maintenance activities may be impaired. assessment further substantiated the software problems to you in May 1992.

CURRENT STATUS

The C-17 is still plagued with many of the same software development problems we identified last year. McDonnell has still not delivered an aircraft with a fully functional avionics suite, although it has added much of the missing functionality through a series of software upgrades.

When serious software development problems led to schedule slippage early in the program, McDonnell revised its plans. It concentrated its development efforts on those basic avionics functions needed for initial flight testing of the T-1 aircraft, but required that all subsequent aircraft be 100 percent functional. This approach provided the software needed to ensure that the T-1 aircraft could safely take-off, demonstrate basic flying qualities, and land. It also allowed McDonnell to delay development and testing of the software needed for more sophisticated avionics functions until delivery of the P-2 aircraft.

The P-2 aircraft, which was delivered to the Air Force in June 1992, about six months late, was designed to contain the specialized instruments (not included on any other C-17 aircraft)

needed to measure and record C-17 avionics test results. However, when the aircraft was delivered, it contained only 55 percent of the mission computer's required software and 80 percent of the electronic flight control and communication software. Again, McDonnell continued its software development and improvement efforts, while planning to install the missing software on future aircraft. However, it was understood that any software delivered on future aircraft would have to be installed and retested on the P-2 aircraft, which would, in turn, stretch out the test program.

The P-5 aircraft, delivered to the Air Force a few days ago on March 12, 1993, still does not contain all required software. Most significantly, the electronic flight control system does not have the software needed to perform take-offs and landings on short airfields and low-altitude parachute drops, two key mission requirements. In addition, the mission computer does not have the required software for critical flight and navigation maneuvers, such as flying in formation and joining other aircraft at selected geographical positions. The Air Force granted what it calls "temporary" relief from these software requirements to maintain the P-5 delivery date, which is critical to the release of additional funding for the C-17 program.

According to the C-17 program office, McDonnell is planning to install some of the remaining missing software on the P-6 aircraft, expected for delivery in June 1993. However, McDonnell does not

expect to have some required software until March 1994--the planned delivery date for P-11. And, consistent with past performance, the program office expects McDonnell to seek a new waiver for software that may not be developed by this date.

McDonnell also remains unable to meet reserve processing and memory capacity requirements. The C-17 contract specified that 25 to 40 percent of the memory and processing capacity of the computers that operate C-17 avionics and flight control subsystems had to be reserved to meet future needs. Six major subsystems, including the mission computer and multifunction display, do not meet these requirements. As it has done when faced with software problems in the past, the Air Force has temporarily waived reserve capacity requirements for these subsystems, not only for P-5, but for later production aircraft as far out as P-13, expected to be delivered in June 1994. If computer reserve capacities cannot be restored, the Government has two options: grant permanent relief, thereby accepting the aircraft with less capacity than originally required or require McDonnell to replace the C-17 computer processors that are not meeting specifications.

Finally, the Air Force's ability to test, maintain, and upgrade C-17 computer systems is in jeopardy because McDonnell has still not developed adequate system documentation. Without good documentation, a computer system is difficult to understand and maintain, and there is less assurance that system modifications

will function as required. In the past, organizations have chosen to redesign and rebuild systems because poor documentation made an existing system too difficult to understand and modify. For those avionics subsystems the Air Force plans to maintain, less than half of the required documents have been approved to date.

The Air Force is planning to partially maintain the C-17 at the San Antonio Air Logistics Center. However, without adequate documentation, it cannot effectively establish this "in-house" capability and will have to rely more on McDonnell or the subcontractor who built the subsystem to provide software support.

Mr. RODRIGUES. Thank you.

I am pleased to be here today to discuss the status of the C–17 program and our overall observations on the management of the program.

The C–17 military transport being developed and produced for the Air Force by McDonnell Douglas Corp. is designed to airlift substantial payloads at long ranges without refueling. The Air Force originally planned to buy 210 C–17's. However, in 1990, the Secretary of Defense reduced the program to 120 aircraft at a currently estimated cost of $41 billion.

Through fiscal year 1993, the Congress has appropriated $13.3 billion for the program. The program entered low rate initial production in January 1989. In addition to the test aircraft and the two nonflying airframes, the contract includes options for a total of six production aircraft under lots 1 and 2. The Air Force has accepted delivery of the test aircraft and five of the six production aircraft. The fifth aircraft was delivered—was accepted by the Air Force last Friday, and therefore it is not reflected in the statement that I submitted earlier for the record.

The ceiling price of this contract, including lots 1 and 2 production aircraft, is about $6.7 billion. In July 1991, the Air Force awarded a separate lot 3 fixed price production contract at a ceiling price of $1.2 billion.

In addition, the Air Force through issuance of undefinitized long lead contracts has awarded McDonnell Douglas over $1 billion for advanced procurement and long lead work on an additional 18 aircraft under production lots 4 through 6.

The Air Force and McDonnell Douglas are in the process of negotiating a contract for the fourth production lot of four aircraft authorized for fiscal year 1992. The Air Force does not expect the lot 4 contract to be awarded before July 1993.

Currently, about 70 percent of the expected contract target price for lot 4 has been obligated for long lead, and additional obligations are likely before contract award. In our opinion, this reduces the Air Force's leverage in negotiating the contract.

You may recall, Mr. Chairman, that in November 1991, we reported a similar condition leading up to the award of the lot 3 production contract. On that lot, the Air Force had obligated about 43 percent of the contractor's target price prior to awarding the contract. Clearly, things have gotten worse.

We have on numerous occasions questioned the reliability of Air Force estimates of cost and schedule on this program. Currently, the development contract which includes the first two production lots is estimated to cost McDonnell Douglas up to $7.9 billion, $1.2 billion over the contract ceiling, a significant loss to the company. It appears to us that the company will also exceed the ceiling price on the third production lot, adding to its losses on the program.

The aircraft delivery schedules are a key factor in estimating costs and in making program decisions. C–17 delivery schedules reported by the Air Force have consistently been unduly optimistic.

For example, in July 1991 the Air Force and McDonnell Douglas agreed to a modified delivery schedule for the development contract because the then existing schedule was not achievable. However, at that time the Air Force knew the new schedule could not be

achieved, and in August 1991 began discussing a more realistic schedule with the contractor.

In October 1991, 7 months before the first production aircraft was delivered, the defense plant representative office projected the delivery dates for the first four aircraft. Three months later, the Air Force projected a more optimistic schedule than the DPRO's October projection. The DPRO projection proved to be more accurate.

In December 1992, we reported on the seeming inability of the DOD to come to grips with the problems. We concluded while reforms have championed sound management practices, these practices run against the grain of the very basic and strongly reinforced incentives to field weapons.

Concurrency and unrealistic cost and schedule estimates can mask problems and result in continued substantial premature investment in programs, thereby reducing the likelihood that a program will be interrupted or questioned when the problems are finally acknowledged.

Good management practices are often at cross purposes with the basic drives and culture of the acquisition process. I believe the C–17 program is a classic manifestation of this culture problem.

Within this culture, the Air Force has taken actions which, while they may not be illegal, are at least inappropriate when viewed against the Air Force's role as overseer of taxpayer dollars. We are all, I think, familiar with the recent DOD IG report entitled "Government Actions Concerning McDonnell Douglas Corporation Financial Conditions During 1990." That report raises serious questions about the length Air Force officials were willing to go to assist the company when it appeared the program could be and probably was being adversely affected by McDonnell Douglas cash-flow problems.

More recently, in our opinion, this culture has led the Air Force to issue three contract modifications which continue long lead effort on lots 4 and 5 and significantly extended the delivery schedule for lot 3 aircraft. There are, we believe, legitimate questions about the appropriateness of these transactions.

These questions concern the impact of contractor finances on Air Force actions, the ability and willingness of the Air Force to compel contract performance, and the absence of legal, contractual, and financial protection for the government.

Let me explain what the Air Force means by long lead. In November 1991 we testified before this subcommittee about our concerns with the Air Force practice of obligating significant amounts of procurement funds to the contractor prior to award of definitized contract. As I mentioned earlier, the Air Force has obligated more than $1 million for advance procurement and long lead efforts on this program under undefinitized contracts.

The purpose of this funding is to cover the contractor's cost and the government's liability for continued work in the event of contract termination. It also permits the contractor to continue a level of effort beyond that envisioned in the normal advance procurement appropriation before a contract is definitized. According to Air Force regulations, this funding can be done to protect schedule.

Now, as to the three modifications in December 1992, they were executed to resolve an impasse that had developed during negotiations on the lot 4 contract over consideration for missing delivery schedules. The contractor had refused to further negotiate on that lot, accept any further funding to continue work on that lot 4, and threatened to discontinue work on lots 4 and 5 unless schedule issues were resolved.

As a result of the modifications, the lot 3 schedule, which the contractor could not have met, was extended and work is continuing on lots 4 and 5 under long lead.

During these negotiations, the Air Force came to realize that the wording of the undefinitized long lead modifications provided little if any protection for the government's interest, and that the delivery schedule, which question obligating the funds was supposed to protect, was not legally binding on the contractor.

The modifications did not require the contractor to deliver anything, only the continual level of effort. Simply stated, under the terms of these undefinitized contracts, the government agrees to provide funds to the contractor and the contractor simply agrees to keep working.

In our opinion, the Air Force could have defaulted the contractor on the development contract and the lot 3 contract if the December modifications had not been signed. However, the Air Force appears to lack the ability to compel compliance by the contractor and/or the willingness to even consider terminating the program.

These actions are consistent with our view of the acquisition culture. I should point out that the Air Force later awarded a lot 6 undefinitized long lead contract with the same wording as the earlier modifications despite knowing that the legal protection of the government's interests was at best uncertain.

The C–17 program faces a myriad of problems. Costs continue to increase and schedules continue to slip beyond company and official estimates. At the same time, the government's financial obligations to the program have increased as the Air Force continues committing to undefinitized long lead contracts to protect schedules not enforceable and not achievable.

Schedules for aircraft deliveries continue to slip in part because McDonnell Douglas cannot and will not make the investments necessary to improve productivity. In reality, the company has little incentive to invest in costly productivity improvements on the far-over-budget program because doing so would simply add to the company's loss on the contract which must be recognized in its current financial statements.

The flight test program likely will not be completed before the latter half of 1995, over 1½ years beyond initial estimates. As we have reported, this slip is due in great part to an unreasonably optimistic test schedule.

Further, the aircraft is encountering problems in achieving range and payload contract specifications because of weight growth, less fuel efficiency from the engine than required, and greater drag or wind resistance than projected.

The Air Mobility Command is currently revising the operational scenarios under which range and payload performance is measured. These revisions will have the effect of reducing the C–17

range and payload shortfalls without improved aircraft performance.

Although substantial progress has been made on the software problems reported to you in May 1992, the contractor has still not delivered an aircraft with fully functional avionic software. Problems continue in three major areas.

Critical software needed for functions such as takeoffs and landings on short airfields and parachute drops is still being developed and has not been tested. The contractor still has problems in meeting memory capacity requirements, and the contractor has not developed adequate system documentation which is needed for the Air Force to establish an in-house maintenance capability. Because this aircraft is still in development, problems are being identified as testing progresses.

I am sure you are aware of the static wing failure which the contractor is working to correct. Also, the wing flap and slat design need to be changed to solve heat problems.

More recently, tests identified a problem with the main landing gear. We fully expect other deficiencies will be found and addressed as the system progresses to its maturity. However, in the meantime there remain large areas of potential delays and needed fixes that can continue to disrupt and slow the aircraft's development and add to the cost and risks of the program.

During the time we have been monitoring the C–17 program, we have also reviewed the operations of the military's overall air mobility system and we have evaluated the results of the recent mobility requirements study. We appreciate the criticality of airlift to our overall war-fighting capability. However, at this point in its development, the C–17 is still an immature aircraft.

It will be several years before anyone can say the C–17 is definitely the answer to our airlift problems. In the meantime, the costs, schedule, and technical problems of the C–17 program have become a financial problem for a major defense contractor.

McDonnell Douglas is projected to lose at least $1.2 billion. While these losses could be viewed as the company's problem, they also concern us because the company could become unwilling to make the financial investments necessary to improve the aircraft's affordability and producibility.

The major problems found in the test program to date, including the static wing failure and range of payload deficiencies, are being addressed, but their full resolution may not be evident for some time yet. We expect other deficiencies will be found and require corrective actions.

These delays result in decisionmakers having only limited information on the extent the C–17 will meet our airlift needs.

We are also very concerned about the affordability of the C–17 and whether the Air Force has seriously considered alternatives which, while not yielding all the projected benefits of the C–17, can offer an adequate airlift capability at less cost to the taxpayer.

This concern is reflected in the fiscal year 1993 Defense Authorization Act which calls for a special review of the adequacy of the C–17 requirements, its cost and operational effectiveness and its affordability.

The C–17 was designed to provide many desirable characteristics that are absent from our current cargo fleet. However, we are concerned these capabilities may not be as necessary as originally projected and certainly not at the steadily escalating costs of the C–17 program.

We do not believe a cargo aircraft, even one with the projected sophistication of the C–17, should cost $350 million a copy. In fact, a plausible argument could be made that the unit cost of the C–17 would preclude its use in direct delivery, which was to be one of the major advantages of this plane.

In summary, we believe the C–17 is a classic manifestation of the defense system acquisition culture that, among other things, permits or invites the premature acquisition of systems at any cost. The Air Force is such a strong advocate for the program that it is unwilling or unable to objectively evaluate the program's shortcomings.

One has to ask the Air Force and the DOD, how much longer should they continue the C–17 program as currently planned? What is the upper limit in terms of cost that can be accepted?

We plan to continue our work in monitoring cost, schedule and performance of the program. In addition, we plan to evaluate the C–17's cost effectiveness given its significantly increased cost and the changes that have taken place in the world since it was initially justified.

Mr. Chairman, that concludes my statement. I would be pleased to answer any questions at this time.

[The prepared statement of Mr. Rodrigues follows:]

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MILITARY AIRLIFT

Status of the C-17 Development Program

Statement of Louis J. Rodrigues, Director, Systems Development and Production Issues, National Security and International Affairs Division

GAO/T-NSIAD-93-8

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Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss the status of the C-17 program. Based on our ongoing work, we will provide information on cost and schedule issues, contract and fund management issues, the status of testing, and a series of technical issues.

RESULTS IN BRIEF

C-17 cost trends continue to deteriorate and the contract delivery schedules continue to slip. The Air Force and the contractor have consistently been unduly optimistic in their cost and schedule estimates and currently have obligated over $1 billion on undefinitized contracts for future aircraft without having a legally enforceable delivery schedule. The Air Force has recently revised the delivery schedules for the lot III production contract in a series of modifications which we believe raise questions about the impact of contractor finances on Air Force actions; the ability of the Air Force to compel contractor performance; and the adequacy of legal, contractual and financial protection for the government.

The completion of the flight test program has been slipped to January 1995, due to a variety of problems including poor flight efficiency, low flight rates, and late delivery of flight test aircraft. However, the Air Force's new flight test schedule is based on assumptions that we believe are again optimistic. Using

more reasonable assumptions, we estimate that the flight test program will not be completed before July 1995.

Several technical problems have emerged over the past year or so. These include range and payload deficiencies, a major wing failure in static testing, the need to redesign the flaps and slats using new materials, and problems with the main landing gear. While these problems are being addressed by the Air Force and the contractor, their full resolution may not be evident for some time. However, because the C-17 is still a technically immature aircraft, we expect other technical problems to be found, potentially increasing program costs and causing further schedule delays.

Overall, we are very concerned about the affordability of the C-17 and whether proper consideration has been given to alternatives that could offer an adequate airlift capability at less cost to the taxpayer.

BACKGROUND

The C-17 military transport, being developed and produced for the Air Force by the McDonnell Douglas Corporation, is being designed to airlift substantial payloads over long ranges without refueling. The Air Force originally planned to buy 210 C-17 aircraft. However, in April 1990, the Secretary of Defense reduced the program to 120 aircraft at a currently estimated cost of about $41

billion. Through fiscal year 1993, the Congress has appropriated $13.3 billion for the C-17 program, including (1) $5.4 billion for research, development, test and evaluation, (2) $7.8 billion for procurement, and (3) $149 million for military construction. Although some of these funds have been used to cover government costs, such as management and testing, the majority of funds are for development and production contracts with McDonnell Douglas, the prime contractor.

In 1982, the Air Force awarded a fixed-price, incentive-fee contract for the development and initial production of the C-17. In addition to the test aircraft and two non-flying test airframes, the development contract included two options (lots I and II) for a total of six production aircraft. The Air Force has accepted delivery of the test aircraft and four of the six production aircraft, which are being used in flight testing. The ceiling price of the development contract, including lots I and II production aircraft, is $6.7 billion. The Air Force awarded a separate fixed-price contract for a third production lot of four aircraft on July 30, 1991. The lot III contract has a ceiling price of $1.2 billion.

In addition, the Air Force, through the execution of undefinitized long lead contracts for lots IV through VI, has awarded McDonnell Douglas over $1 billion for advance procurement and long lead work on 18 additional aircraft. Advanced procurement involves buying

parts that need to be ordered the year before the production effort is expected to start, while long-lead work entails beginning production work before a definitized contract has been negotiated. The Air Force and McDonnell Douglas are now negotiating a contract for four lot IV aircraft authorized for fiscal year 1992. The Air Force does not expect the lot IV contract to be awarded before July 1993.

COST AND SCHEDULE ISSUES

Both the Air Force and the contractor's official cost and schedule estimates have been consistently unduly optimistic. Based on declining cost performance trends, recent test problems, and slips to the flight test schedule, we believe cost estimates will increase again in the near future and the program schedule may continue to slip.

Cost Growth

In April 1992, we reported that costs continued to increase on the development contract and that the costs incurred by McDonnell Douglas had exceeded the contract ceiling price.[1] Our continued monitoring of the development and lot III production contracts show that costs continue to increase as efficiency deteriorates. For

[1]Military Airlift: Status of the C-17 Aircraft Development Program, (GAO/NSIAD-92-205BR, Apr. 1992).

example, one key indicator of cost efficiency is the cost performance index (CPI). The CPI compares work accomplished against the actual dollars spent for that work. For January 1993, the monthly CPI for the development contract was .26, the lowest efficiency measure to date. This CPI means that for January, McDonnell Douglas accomplished $0.26 of planned work for every dollar spent on the development contract.

The Administrative Contracting Officer (ACO)--an official from the Defense Plant Representative Office (DPRO) at McDonnell Douglas--continues to increase the government's estimated cost at completion (EAC) for both the development and lot III contracts based in part on the negative cost performance trends. The ACO uses the EAC to determine progress payments. As of February 1993, the DPRO was using an EAC of $7.9 billion for the development contract--more than a billion dollars over the ceiling price. As of December 1992 the lot III EAC was $1.1 billion. Due to the recent static wing failure, slips to the flight test program, and declining cost performance trends, we expect these EACs will increase again in the near future.

Furthermore, the DPRO has identified several conditions which may obscure and delay the timely reporting of negative cost performance data on the lot III contract. Two examples of these conditions are (1) the use of a baseline to measure cost performance which is greater than the contract target cost, normally only done when a

contract has overrun its budget, and (2) the contract budget may be "front loaded"; that is, the budget for work to be done early in the contract may be overstated, while the budget for later work may be understated. These conditions may inhibit the ability to project an over-ceiling EAC, which is crucial to the timely application of a loss ratio[2] to progress payments.

As a result of these concerns, the DPRO recently developed a nonstandard analysis that demonstrated that actual costs could reach or exceed the lot III contract ceiling. Additionally, according to an Air Force official, analysts in the Office of the Under Secretary of Defense for Acquisition have informed the Air Force that their projections show costs exceeding the lot III contract ceiling price. However, an Air Force official said that their analysis does not support cost exceeding ceiling. Our ongoing assessment of the McDonnell Douglas cost data supports the DPRO's conclusion.

Productivity

Improving productivity, or the efficiency and quality of the production process, is critical to improving cost and schedule performance trends. In April 1992, we reported that, while McDonnell Douglas' production efficiency, as measured by the

[2]A loss ratio is implemented when the EAC exceeds the contract ceiling price. Its purpose is to reduce progress payments to reflect a portion of the contractor's loss.

production learning curve, was improving with each successive aircraft, the rate of improvement had not increased. We noted that the McDonnell Douglas production review team had stated that the C-17 production learning curve would have to improve if program cost and schedule objectives were to be realized.

One key driver of learning curve trends has been the displacement of C-17 assembly personnel due to the reduction in personnel on McDonnell Douglas commercial programs. The C-17 program has experienced severe personnel disruptions because of a labor contract that allows senior workers on commercial projects to "bump", or displace, less-senior workers on government projects. According to the Air Force Program Director, as many as one-third of the C-17 assembly work force was displaced in 1992, and as many as one-half may be displaced in 1993. This bumping, along with parts shortages and other factors, continues to inhibit the achievement of an improved learning curve.

Also, we remain concerned about the impact of assembly quality on cost and schedule trends. In April 1992, we reported that the first aircraft delivered had a level of off-standard hours (primarily for rework and repair) equaling 40 percent of the total assembly hours. We also noted that subsequent aircraft were displaying similar trends. Since then, four additional aircraft have been delivered, with approximately 40 percent of the total assembly hours of each attributable to off-standard work.

Similarly, McDonnell Douglas data showing rework and repair cost per 1,000 assembly hours shows no significant improvement for the four aircraft. We believe that, to reduce production costs, the contractor must reduce off-standard hours, as a percentage of the total hours required to build an aircraft.

Delivery Schedule

In April 1992, we reported continued slips to the contract delivery schedules. All 7 aircraft covered by the development contract either have been or will be delivered 3 to 6 months behind schedule.

We believe aircraft delivery schedules play a vital role in managing the C-17 program because the schedule is an important factor in estimating costs and in making program decisions. The Federal Acquisition Regulation notes that the time of delivery is an essential contract element and contracting officers are to ensure that delivery schedules are realistic and meet the requirements of the acquisition.

On the C-17 program, the schedule as reported by the Air Force has consistently been unduly optimistic. For example, in July 1991, the Air Force and McDonnell Douglas agreed to a modified delivery schedule for the development contract, recognizing that the contract schedule was not achievable. However, at the time of the

contract modification, the Air Force was aware that the new schedule similarly could not be achieved and in August 1991 began discussing a more realistic delivery schedule with the contractor.

In October 1991, 7 months before the first production aircraft was delivered, the DPRO projected the delivery dates for the initial production aircraft. Three months later, the Air Force projected a more optimistic schedule than the DPRO's October analysis. Deliveries through the fourth production aircraft were two aircraft months later than the DPRO estimated and 5 aircraft months later than the Air Force estimated.

The October 1991 DPRO analysis projected significant slips to the lot III aircraft deliveries. Again, this analysis contrasted sharply with the Air Force's schedule projections, which showed no significant slip to the lot III deliveries. It was not until August 1992, almost one year later than the DPRO analysis, that the Air Force began projecting significant schedule slips for lot III aircraft deliveries.

As a result of McDonnell Douglas's failure to meet the development contract's aircraft delivery dates, the DPRO notified the contractor in July 1992 that it intended to withhold progress payments under the development contract, stating that McDonnell Douglas had "continually failed to demonstrate the ability and performance to meet schedule commitments." The DPRO went on to

state that "(f)ailure to immediately correct systemic Program Management deficiencies will contribute to subsequent aircraft cost growth and schedule slippage, thereby seriously compromising the affordability of the entire C-17 Program." To date, the Air Force and McDonnell Douglas have not resolved the late deliveries of the first seven aircraft. However, the DPRO has withheld progress payments for late deliveries since issuing the above notification.

Schedule Changes

While the late deliveries of the first seven aircraft have not been resolved, schedule changes have been made for the lot III aircraft. On December 31, 1992, the Air Force issued three contract modifications that continued long-lead effort on lots IV and V and significantly extended the contract delivery schedule for lot III aircraft. The Air Force C-17 Program Executive Officer negotiated these modifications to resolve an impasse between the C-17 program office and McDonnell Douglas primarily over compensation for not meeting contract delivery schedules. According to Air Force officials, the company blamed the government and believed it was owed compensation, whereas the C-17 program office believed just the opposite.

This impasse stalled negotiations on the lot IV production contract. In addition, the contractor refused to accept any

additional long-lead funding to continue work on lot IV aircraft and threatened to stop work on lots IV and V aircraft on December 31, 1992, unless the schedule issues were resolved.

According to the Air Force, the government received no monetary consideration for extending the lot III delivery schedule. Instead, the government would obtain a delivery schedule that the Air Force believes is more advantageous to the program in that it would avoid a break in production. In turn, the contractor would achieve better production efficiency and a lower schedule risk.

The memorandum of negotiations for these three contract modifications indicates that the contractor agreed to a new schedule for lot III, to continue long-lead work on lot IV with additional funding, and to continue lot V long-lead work without additional funding until 30 days after delivery of the fifth production aircraft, or April 15, 1993, whichever occurred first. The Air Force was unable to provide additional funding for the lot V effort due to a statutory restriction that prohibits using fiscal year 1993 procurement funds until the fifth production aircraft is delivered. The development contract called for that aircraft to be delivered in October 1992, but it is behind schedule.

We believe these transactions raise legitimate, unanswered questions about the impact of the contractor's finances on Air Force actions; the ability and willingness of the Air Force to

compel contractor performance; and, as discussed below, the adequacy of legal, contractual, and financial protection for the government.

CONTRACT AND FUND MANAGEMENT ISSUES

In November 1991, we testified before this Subcommittee that we had concerns about the Air Force practice of obligating significant levels of procurement funding to the contractor prior to the award of a definitized contract.[3] The Air Force refers to this as long lead. The amount of funding obligated by the Air Force to McDonnell Douglas without a definitized contract has grown dramatically. To continue production, the Air Force had obligated approximately $1.06 billion, as of February 1993, to cover termination liability for effort on 18 aircraft to be procured as lots IV, V, and VI. These funds consist of fiscal year 1990 through 1992 advance procurement funds and fiscal year 1992 regular procurement funds. To date, the government has authorized for payment to the contractor approximately $340 million, or 32 percent of the total amount obligated.

Recently, as a part of negotiations leading to the modifications resolving the schedule issues, Air Force officials pointed out that the government's rights and remedies under the C-17 long-lead

[3]Defense Industry: Status of the C-17 Program and Related Issues Affecting McDonnell Douglas, (GAO/NSIAD-92-4; Nov. 14, 1991).

contracts are much more limited than under a definitized contract. Specifically, they acknowledged that, although the primary reason for long-lead funding is the preservation of aircraft delivery schedules, the C-17 long-lead contracts do not contain a legally enforceable schedule of deliverables. Aside from the poor management aspects of such an arrangement--for example, the lack of visibility over the contractor's actions and the impact on the contractor's incentive to negotiate a definitized contract, the continued use of long-lead funding poses significant financial risks to the government because of the absence of a legally enforceable schedule. In spite of these concerns, the Air Force has awarded an undefinitized contract to begin work on lot VI aircraft under these same provisions.

TESTING

In April 1992, we reported that the C-17 flight test program had begun to slip. The Air Force originally planned to complete the test program by December 1993, but its completion has now slipped at least 13 calendar months to January 1995 due to a variety of problems, including poor flight test efficiency, low flight rates, and late delivery of flight test aircraft.

The Air Force initially designed the C-17 flight test program to accomplish development, and dedicated and initial operational testing within 80 aircraft months or 27 calendar months. In

designing the original 80-month schedule, the Air Force planned for an overall flight efficiency rate of 91 percent and an average monthly flight rate of 33 hours per aircraft per month.

As of February 20, 1993, the Air Force had completed about 25 percent of the required flight credit hours and about 27 percent of the total test points. Overall, C-17 test aircraft have averaged a monthly flight rate of about 29 hours per aircraft and have completed about 479 flight credit hours of the 1,020 total flight hours flown, for an overall flight efficiency rate of about 47 percent, considerably below that originally planned. However, the average monthly flight rate and efficiency have recently shown some improvement.

C-17 program officials now concede that the original schedule, with it 91 percent efficiency rate and average monthly flight rate per aircraft of 33 hours, was highly optimistic when compared with other flight test programs. Factors that have contributed to the test program's schedule problems include:

-- McDonnell Douglas has delivered each of the five test aircraft 3 to 6 months late.

-- Since their delivery, the test aircraft have spent 37 percent of the total aircraft time in work programs to perform

maintenance, complete deferred work, fix problems such as fuel leaks, and correct other aircraft design and system problems.

-- A significant amount of flight time (32 percent) has been used for unplanned flight test demands to investigate aircraft design and system problems, and perform functional checks as well as other management-directed tests.

-- The contractor delivered aircraft having immature software and hardware configurations.

-- Finally, weather conditions and test range problems have contributed to the delay in completing some of the testing.

In February 1993, the Air Force formulated a new test schedule to manage the program based on an overall review of the program by the C-17 program office and McDonnell Douglas. The new schedule calls for increasing the number of aircraft months used for testing from 80 to 124, slipping the completion of the test program from December 1993 to January 1995, a 13 calendar month slip. In July 1992, the Air Force established a number of process action teams to develop solutions to test program problems. The 124 aircraft month schedule is based on the results of the work of these teams and assumes a significant increase in the average monthly flight rate to about 45 hours per aircraft and the average overall flight efficiency to about 62 percent for the remainder of the program.

Also, the Air Force is considering adding another aircraft to the test program that would further shorten the calendar time required to complete the test program.

This new schedule may still be very optimistic given the past performance history of the C-17 program and other flight test programs and the various problems the Air Force and McDonnell Douglas have encountered in conducting the testing. The Air Force has also developed a low-risk schedule based on a flight test efficiency rate of 52 percent and an average flight rate of 35 hours per test aircraft for the balance of the test program. We believe this is a more reasonable schedule given the history of the program. Using this schedule, adjusted to reflect the impact of the static wing testing problems, we estimate that completion of the test program would slip from December 1993 to at least July 1995, a slip of 19 calendar months. We believe this estimate is more accurate than the January 1995 date.

TECHNICAL ISSUES

Several technical problems have been encountered with the program. These problems may result in decreased aircraft performance, increased program cost, and extended program schedules.

Range and Payload Issues

Based on estimates of weight, engine performance, and drag (wind resistance), the C-17 will not meet contract specifications or the user's operational range and payload performance requirements when initially delivered as an operational aircraft. Table 1 shows the estimated range and payload shortfalls.

Table 1: Current Range and Payload Shortfalls

Mission specifications (payload and range)	Current payload shortfall to specification[a]	Current range shortfall to specification[a]
Maximum Payload 160,000 lbs., 2400 NM[b]	9,775 pounds	224 miles
Heavy Logistics A 150,000 lbs., 2700 NM	12,572 pounds	295 miles
Heavy Logistics B 130,000 lbs., 2800 NM	36,655 pounds	322 miles
Intertheater Log. 120,000 lbs., 2800 NM	12,627 pounds	319 miles
Hi-Performance Log. 75,000 lbs., 500 NM	5,482 pounds	81 miles
Ferry 0 lbs., 4600 NM	N/A[c]	363 miles

aBased on aircraft operating weight (empty), of 276,571 pounds, 2.8 percent specific fuel consumption shortfall, and a 3.9 percent increase in baseline drag. The payload and range shortfalls are two ways of indicating the performance shortfalls.

bNautical miles

cNot applicable

In 1989, 1990, 1991, and again in 1992, we reported that continuing weight growth could reduce C-17 performance. Since our March 1992

report, the estimated weight of the aircraft has increased about 2,400 pounds. Its projected weight is now 276,571 pounds compared to an expected design weight of 268,000 pounds. We believe further weight increases could occur because only about 25 percent of flight testing has been accomplished, durability testing[4] has only recently started, and static testing[5] has to be completed.

Air Force officials have developed a payload recovery program. However, even if this program is successfully completed, the aircraft will still not meet the range and payload performance requirements. Table 2 shows the projected range and payload shortfalls after implementation of the current recovery program.

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[4]Testing to ensure that the economic life of the airframe meets the design service life.

[5]Testing to substantiate the static strength and stiffness characteristics of the C-17 aircraft.

Table 2: Projected Range and Payload Shortfalls After Implementing Payload Recovery Program

Mission	Specifications		Payload deficit (pounds)		Range deficit (nau. mi.)	
	Payload (Pounds)	Range (nau. mi.)	From spec.[a]	From ORD[b]	From spec.[a]	From ORD[b]
Max Payload	160,000	2,400	2,134	(1,923)	50	(45)
Heavy A	150,000	2,700	4,823	N/A[c]	115	N/A[c]
Heavy B	130,000	2,800	25,703	N/A[c]	195	N/A[c]
Inter-theater	120,000	2,800	5,022	1,465	128	37
Hi-Perf.	75,000	500	1,321	(6,070)	19	(91)
Ferry	0	4,600	0	0	242	51

aAssumes 1,435 pounds of weight reductions, 1.3 percent improvement in drag (1,666 pounds), specific fuel consumption improvement of 0.6 percent (778 pounds), and a 5,000 pound increase in maximum gross takeoff weight (3,761).

bIncludes impacts of all payload recovery actions included in table plus the impact of proposed mission flight scenario changes included in the Operational Requirements Document (ORD).

cThis mission is only a contractual requirement and not an operational requirement.

Further weight reductions, performance improvements, or changes to contract specifications would be needed to satisfy required contract missions. However, Department of Defense (DOD) documents indicate and program officials have stated that McDonnell Douglas is unwilling to invest in high-cost solutions to reduce weight. We believe this unwillingness to invest additional funds is a function of the company's current loss position on the development contract.

The C-17 engine does not meet contract specifications for fuel efficiency. According to Air Force officials, the engine manufacturer is implementing an engine upgrade to improve fuel

consumption, the same upgrade that commercial aircraft users of this engine will receive from the manufacturer, but it will only recover 0.6 percent of the 2.8 percent fuel efficiency shortfall. Air Force officials told us they do not want to require the engine contractor to fully upgrade the engines to meet contract specifications because further upgrades would cause the loss of the engine's commercial compatibility. If this happens, they said, low engine maintenance costs originally envisioned would not be realized, and unit costs would be higher.

In December 1992, the Air Force awarded a contract to Pratt and Whitney for engines to be supplied to McDonnell Douglas as government-furnished equipment for the lot IV aircraft. This means the government will deliver engines not meeting contract specifications. Air Force officials have stated that it is likely that the government, at a minimum, will have to reduce the C-17's contract performance specifications to account for the performance shortfall attributable to the engines (an estimated 2,750 pound reduction). This assumes that the engine manufacturer will be relieved of the responsibility to retrofit the engine to satisfy the contract specification, which is reasonable, given the Air Force's position. This potential reduction in contract specifications would enable the aircraft to meet the range and payload specification for the maximum payload mission, should all other planned payload recovery actions prove successful.

The contractor and the Air Force are also evaluating aerodynamic changes to reduce aircraft drag, which contractor officials estimate will improve aircraft range/payload performance by 1,666 pounds. In addition, the contractor is evaluating an increase in the maximum takeoff weight that will allow the aircraft to carry more fuel and thereby further reduce the range/payload performance shortfall. The savings estimated from these actions are all reflected in table 2 above.

In addition, the Air Mobility Command is changing the operational scenarios under which range and payload performance is measured. These changes will have the net effect of reducing the aircraft's range and payload shortfalls without improving performance. The Air Mobility Command is making these changes less than 2 years after revising the range and payload requirements to match what it then referred to as its threshold performance levels--the minimum acceptable performance.

Wing Failure

On October 1, 1992, both wings on the static test article failed at approximately 128 percent during a 150-percent limit load test. The test simulated the aircraft carrying a weight of 585,000 pounds and encountering a strong wind gust at an altitude of 32,100 feet. The failure caused buckling to occur on the upper skin between the

engines and in the wing interior from the front to the rear of each wing.

McDonnell Douglas immediately formed an engineering team to address the wing failure. The Air Force also formed an Executive Independent Review Team (EIRT) to review McDonnell Douglas's results and recommendations. The EIRT has reviewed the work done by the McDonnell Douglas team and concurs with its findings and recommendations. The contractor determined the root cause for the failure to be a combination of three factors: (1) a computational error, (2) an optimistic methodology in predicting how the structure would react to applied loads, and (3) a high and uneven distribution of test pads.

The computational error and optimistic methodology were not unique to the area of the failure. After the entire wing was screened, other areas of the wing were found to need design modification. In addition, other areas of the aircraft are being evaluated for similar problems. Thus far, some areas of the fuselage have been identified as needing strengthening.

The recommended design modification includes adding materials to strengthen the wing. For completed aircraft and completed wing sets, the structural build up will require the removal and reinstallation of previously installed fuel, hydraulic, and

electrical systems. The work on later aircraft will be done during the assembly process.

The test aircraft have been flying with an 80-percent limit load flight restriction. The static test article must be tested successfully to 150 percent before 100-percent limit load flight testing occurs. Static testing is scheduled to resume July 6, 1993, with a completion date of October 29, 1993. If successful, this would enable test aircraft to initiate 100-percent load testing on October 30, 1993. This testing will take approximately 3 months to complete.

The wing modification will add 600 to 700 pounds to the weight of the aircraft.

Flap and Slat Redesign

In July 1992, we reported that the C-17 flap was susceptible to heat damage from the engine exhaust.[6] The heat can ripple or buckle the flap skin and weaken the flap structure.

To correct this problem, McDonnell Douglas is changing the trailing edge material of the metal aluminum flap to titanium. The contractor is also changing the flap hinge fairings. The

[6]Military Aircraft: C-17 Wing Flap Requires Additional Testing, (GAO/NSIAD-92-160; July 8, 1992).

contractor estimates that parts will be available for installation in September or October 1993.

The C-17 slats are also experiencing heat damage. The slats are not able to withstand the heat from the engine core flow during reverse thrust, which is used during backing and some landing situations.

To correct this problem, the contractor has completed the redesign for the slats to include the titanium skin and substructure for portions of the slats. The contractor estimates that parts will be available for installation in October 1993.

The redesigned flaps and slats are expected to add approximately 1,100 pounds to the weight of the aircraft.

Main Landing Gear

A recent landing gear problem has grounded the test aircraft at various times over the last month. On one of the aircraft, a crack was found in the main landing gear during a pre-flight inspection in early February 1993. A subsequent failure of the landing gear occurred on a second aircraft after the problem was identified. The other aircraft have been or are being inspected to determine whether further problems exist.

The contractor and the Air Force are evaluating the possible causes and have not yet determined the reason for the failures. The contractor has replaced damaged parts on some aircraft and flying has resumed with additional inspections of the main landing gear being performed.

OVERALL OBSERVATIONS

We have been monitoring the progress of the C-17 program for several years. We have also reviewed the operation of the military's air mobility system and have evaluated the results of the Mobility Requirements Study. We appreciate the criticality of airlift in our overall warfighting capability.

At this point in its development, the C-17 is still an immature aircraft, and it will be several years before anyone can say that the C-17 is definitely the answer to our airlift problems. In the meantime, the current cost, schedule, and technical problems with the C-17 program have become a financial problem for a major defense contractor. McDonnell Douglas is projected to lose at least $1.2 billion on the contract for full-scale engineering development and the production of the first six aircraft. We believe that the final cost of the lot III contract for four aircraft will exceed its ceiling price, resulting in additional losses to the company. While these losses could be viewed as the corporation's, they are also a concern to the government because

they lead to an unwillingness by the corporation to make the financial investments necessary to improve the aircraft's producibility and affordability.

The major problems found in the test program to date--including the static wing failure and range/payload deficiencies--are being addressed, but their full resolution may not be evident for some time. We expect that other deficiencies will be found and require corrective action, resulting in additional delays. These delays and the delays in the test program will result in decisionmakers having only limited information available, as annual production decisions are made, on the extent to which the C-17 will meet airlift needs.

Finally, we are very concerned about the affordability of the C-17 and whether the Air Force has seriously considered alternatives which, while not yielding all of the projected benefits of the C-17, could offer an adequate airlift capability at less cost to the taxpayer. The Armed Services Committees recognized these concerns in the fiscal year 1993 defense authorization act by requiring DoD to conduct a special review to determine the adequacy of C-17 requirements, its cost and operational effectiveness, and its affordability.

The C-17 was designed to provide many desirable characteristics that are absent from the current cargo aircraft fleet. However, we

are concerned that the added capabilities of the C-17 may not be as necessary as originally projected and certainly not at the steadily escalating cost of the C-17 program. We do not believe that a cargo aircraft, even one with the projected sophistication of the C-17, should cost in the area of $300 million to $350 million per aircraft. In fact, a plausible argument could be made that the unit cost of the C-17 would preclude its use as a direct delivery aircraft, one of its main features.

We have recently reported on our concerns about the defense system acquisition culture.[7] We believe the C-17 program is a classic manifestation of that culture because the Air Force is such a strong advocate for the program that it appears to be unwilling or unable to objectively evaluate its progress and shortcomings. One has to ask how much longer the Air Force and DOD should continue with the C-17 program as currently planned and what cost can be reasonably accepted?

The Air Force's unyielding advocacy for the program has, in our view, contributed to the problems recently surfaced by the DOD-IG concerning the Air Force's financial relationships with McDonnell Douglas. Further, we believe that McDonnell Douglas could have been defaulted on the development contract and also on the lot III contract if the December schedule modifications had not been

[7]Weapons Acquisition: A Rare Opportunity For Lasting Change, (GAO/NSIAD-93-15; Dec. 1992).

signed. However, the Air Force appears to lack the ability to compel compliance by the contractor or the willingness to consider terminating the program.

We plan to continue monitoring the cost, schedule, production, and testing status and technical problems of the program. In addition, we plan to evaluate the C-17's cost/effectiveness, given its significantly increased cost and the changes that have taken place in the world since the aircraft was initially justified.

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Thank you for the opportunity to discuss our ongoing and planned work on the C-17 program. I will be happy to answer any questions you may have.

Mr. CONYERS. Thank you very much, Mr. Rodrigues, for a very thorough and detailed statement. We commend you on your work.

The Chair recognizes the gentlelady from New York, Mrs. Maloney.

Mrs. MALONEY. Thank you very much, Mr. Chairman.

Later today we will take a vote on one of the most ambitious economic plans in our Nation's history. The cornerstone of the plan is that we maintain a trust with the American public, of whom we are asking a great deal. But the facts of these hearings reveal the very reason why the public is so mistrustful of the Federal Government.

The hearings have exposed government at its worst: Programs out of control; special treatment for defense contractors; illegal activity; and not one iota of concern for how these Air Force and corporate officials spend the taxpayers' hard-earned dollars.

These hearings have exposed hundreds of millions of dollars in illegal payments. This hearing exposed yesterday the technical disasters which have beset the C–17 since the day it started.

In the hearings we discovered that we are paying $400 million for a cargo plane, basically a pickup truck with wings, and the wings break. We are paying that much today, when just 3 years ago the same basic type of cargo plane cost $95 million. Something is very, very wrong.

I have been told that officials from the Air Force and officials from McDonnell Douglas think so little of this oversight panel that they have simply refused to show up and answer questions. These men have a duty to account for how they spent the public's money. And if General Butchko and John McDonnell won't willingly account for their actions, then we have a responsibility for the American public to compel them to be here.

So I respectfully, Mr. Chairman, repeat my request from yesterday that we issue subpoenas for all witnesses who have refused to attend these hearings. The integrity of Congress is on the line. Either we have the right and power to make people explain their actions, or we don't. And if we let Air Force officials and corporate officials walk away from these hearings without any attempt to require their presence, we are giving an open invitation to government agencies and contractors to continue with the waste and fraud which we are seeking to prevent.

That is our duty to our constituents, Mr. Chairman. They have a right to hear these officials explain where the taxpayers' money, is going.

Thank you very much, Mr. Chairman.

I unfortunately am being called to an emergency meeting at 10:30, so I appreciate your letting me take questions out of order.

My first question is to the GAO. You are the GAO; what should we do now? Should we continue with this program?

Mr. RODRIGUES. Let me answer it this way. What we believe is that what needs to be done is before any additional commitments are made to this program, we need to evaluate whether the program is still justified, in light of the changes in the world, the changes in the threat and particularly the significantly increased cost of this aircraft.

We further believe there are alternatives which, while they would not yield all the capabilities of the C–17, could offer adequate airlift at less cost to the taxpayer.

So I think we need to step back and take a hard look at this before we make additional commitments.

Mrs. MALONEY. Thank you.

Yesterday the IG's staff indicated they thought it would take over $8 billion for the Air Force to receive six working planes, $1.5 billion more than the original contract. Do you agree with that figure?

Mr. RODRIGUES. That is certainly within the range, yes.

Mrs. MALONEY. Really?

Mr. RODRIGUES. We think costs are going to continue to escalate, yes. Clearly it is out of pocket to the contractor.

Mrs. MALONEY. Yesterday the inspector general documented the efforts made by the Department of Defense to bail out McDonnell Douglas in 1990. We are very concerned that the effort may still be continuing. Is the Air Force still making questionable financial transactions that could affect the cash-flow of the company in question?

Mr. RODRIGUES. The December 1992 modifications I referred to in the statement clearly provided relief affecting the contractor's cash-flow in basically two ways. First, the contractor has avoided withholds of $2.5 million per aircraft per month for lot 3. Had that modification not been issued, the contractor would have had his first delivery in February 1993. Clearly there is no way that could have been made. That has now been slipped to August. They have got a 6-month slip there and $2.5 million per month that applies to each aircraft under that lot. So clearly he is getting short-term relief.

The second area where he gets some relief is with the stretch of the schedule, the contractor can slow expenditures, thereby further reducing its short term cash-flow problems. Actually, if I could—I have a chart here to the left. This gets into a number of issues, but what this shows you is what they say was the consideration received on the part of the government for renegotiating the schedules.

What this is is the amount of touch labor, which is the hands-on labor to build the aircraft, starting in December 1992. This line is what that touch labor would have looked like had we not changed the schedule. The dotted line is what the touch labor is projected to be under the new schedule.

You can see from that that McDonnell Douglas then would have to have fewer people on board earlier in the program, thereby reducing their short-term cash requirements.

Theoretically, this is the consideration that we got for that negotiation.

Mrs. MALONEY. Thank you.

Yesterday, testimony was received about $1 billion that was paid without a signed contract. How do we measure contract performance which affects progress payments when there is not a signed contract.

Mr. RODRIGUES. There really is nothing—these undefinitized contracts have no deliverables. There were no items to be delivered; therefore, there is nothing to be measured against.

You have a cost-plus contract. The contractor works, submits the bills based on costs incurred, and we pay progress payments at the rate of 80 percent against those bills.

Mrs. MALONEY. Mr. Rodrigues, you testified earlier that you feel that the real problem was not a new law or laws in contract procurement, but, I think your words were a change in the cultural attitude of the Pentagon toward acquisition.

Could you expand on this statement? Could you give us some examples? What exactly do you mean by the culture of the Pentagon as per procurement?

Mr. RODRIGUES. Let me just first say that your observation is absolutely correct. We see that the root cause of the situation that we are discussing here today and that we see on a number of programs is in fact the culture and the incentives in the system that reinforce the culture.

However, that is not to say that perhaps some legislative and/or regulatory changes would not be appropriate. But let me talk about the culture.

What we see and have described in our recent report on the subject is a system that drives the key players in the acquisition process to do whatever they can to ensure that weapons are bought and fielded regardless of cost or a system's ability to perform as originally intended.

We find individuals being rewarded by getting systems through by masking performance and schedule problems until we have so heavily invested in these programs that the Congress is in no position to reasonably question or terminate the program, which puts Congress in a much worse position than they otherwise would be.

I would like to look at the actions in the IG's report as an example. What we see is key individuals whom the IG identified as abusing their rank and authority, being rewarded for moving the program forward, and those who tried to protect the government's interest being penalized.

Specifically, General Butchko, the program manager, who pushed through the questionable transactions in 1990, was promoted, and Colonel Tollefson, the DPRO at the time, who attempted to protect the taxpayers' interests, was left with little alternative but to retire from the military.

As you can see from that, the incentives clearly drive a culture which is at cross purposes of the objectives of sound management, accurate reporting and thorough testing. What needs to be done is deal more severely with those who while operating within the letter to the laws and regulations are by any other measure violating the public trust. Rather than allow the system to promote these people for poor management, we should be holding them accountable.

The culture problem, though, is compounded by the degree of concurrency in these programs and the misuse of long lead funding which gives them the mechanism for getting involved in these programs. I think what you see is a culture and a system that works together to take away from this body the right which is this body's,

which is to decide whether or not these are the programs that in fact we should get. What they do is they get these programs to the point where we are so heavily invested, we are so committed to them, that by the time they become open about the problems, they really have made all the policy decisions for you, and the prerogatives have been taken away.

These are decisions that should be rightfully made by the Congress. The Congress has the right to have that information when it is available to the Department. And they just can't keep always having these optimistic pictures and protecting you from having to make the hard decisions until it is too late.

Mrs. MALONEY. Did you see the movie, A Few Good Men?

Mr. RODRIGUES. Yes, I did.

Mrs. MALONEY. Is that what you are seeing in the acquisition culture of the military?

Mr. RODRIGUES. Yes, you sure do. This was described to me another way, too. Somebody drew a line for me the other day from the movie Field of Dreams. The quote was where someone from heaven is speaking down to Kevin Costner and says, "If you build it, they will come." That is kind of what you see there.

Mrs. MALONEY. On a more serious note, isn't it true that in schedule slippages, and in specification reductions, we are just accepting whatever the contractor can deliver on his schedule without any appropriate price reduction. Isn't this in a sense a type of subsidy or bailout in a sense?

Mr. RODRIGUES. Let me put a couple of parameters around the term bailout, because I think to most people a bailout would normally be taken as this contractor is clearly losing a substantial amount of money, and we are going to pay all those bills right now up front. Certainly changing the schedules and reducing specifications does provide relief to the contractor which in the broadest context could be considered a form of bailout.

I guess I tend to refer to it, once again, more as actions that have been taken on the C–17 program in 1990, and again in December 1992, that reflect extraordinary efforts to provide the contractor with relief to his short-term financial problems.

Mrs. MALONEY. Is the $50 million figure reported by the Air Force to be the amount needed for the wing repair an accurate number?

Mr. RODRIGUES. I think that figure is a little misleading.

Let me have Mr. Denomme explain the details of that.

Mr. DENOMME. I think at this point in time it is premature to say there is a good dollar amount that is being reported as to what that is going to cost. Our understanding is that the $50 million that has been reported as the cost, represents the cost that has been incurred to date to identify the problem, and an estimate of what it will cost to fix the static article, to then continue testing, it does not include what it is going to cost to actually repair the planes that have been—that are under construction at this point in time.

Mrs. MALONEY. So if $50 million is not the accurate figure, what is the accurate figure?

Mr. DENOMME. I would be guessing, and I think that at this point in time it is premature to say there is a good estimate out

there, but I would expect it to be somewhere in the area of $100 to $150 million.

Mrs. MALONEY. Did you hear that, Mr. Chairman?

Mr. CONYERS. I did hear it.

Mr. RODRIGUES. Mrs. Maloney, if I could go back to your earlier question, there was a key point I missed when we were talking about the comparisons of what happened in 1990 to now and the inappropriateness of activities.

I want to make it clear that in the renegotiation of these contracts in December, there was nothing inappropriate or illegal about General Franklin taking over negotiations to get past that impasse.

But what does appear to be very inappropriate, and contrary to the intent of the FAR, is that in those negotiations they excluded the procurement contracting officer, the individual who has the warrant and is the only person authorized to sign those modifications and to certify that in fact the deal is a fair and reasonable deal. He was not part of any of those.

Mrs. MALONEY. May I ask a question about that? Since this was a procurement transaction, why in the world was the procurement officer not participating in this procedure? That is his role and his duty and his job.

Mr. RODRIGUES. Absolutely. It was not Mr. Pfeifer's problem. They just didn't bring him into the process. He should have been in that process. But let me read from a couple——

Mrs. MALONEY. So again that was a violation of the Federal Acquisition Regulations.

Mr. RODRIGUES. It is clearly not in the intent of the regulations. Once again, you are not—the laws and regulations aren't that tight that you end up with a clear violation. But it clearly——

Mrs. MALONEY. Mr. Chairman, I suggest we invite in the chief procurement officer for his explanation as to why he was not included in these proceedings.

Mr. RODRIGUES. What he did do, though, was make two memorandums to the file on December 30 and December 31 dealing with these negotiations prior to his actually signing the modifications. Let me read a couple of excerpts that to me are very disconcerting. These are quotes from those memorandums.

"The agreement was negotiated between Major General Franklin and McDonnell Douglas. I was not a party to the negotiations, and can only review the resulting documentation prepared by the PEO, General Franklin's office, and McDonnell Douglas as a result of the negotiations. Since I was not a party to the negotiations, a determination of fair and reasonable settlement can only be based on the documentation provided and a reliance on the statement by the PEO, General Franklin, that the agreement is fair and reasonable."

He says later: "McDonnell Douglas deleted any reference to recognizing McDonnell Douglas' behind schedule condition. I felt that this was unacceptable, because it would shift all responsibility on to the government and allow for McDonnell Douglas to file a delay and disruption claim at some future date. After holding discussions with Brigadier General Miller," who is the C–17 director, "and the C–17 program director, they wrote the Lot 3 schedule agreement to take out what General Miller called finger-pointing wording."

It would seem that clearly Mr. Pfeifer was concerned about what had transpired.

Mrs. MALONEY. It appears based on Mr. Pfeifer's memorandum that he should have been involved in the procurement process.

Mr. RODRIGUES. There is no question.

Mrs. MALONEY. Which was his job.

Mr. RODRIGUES. No question he should have been involved in the negotiations.

Mrs. MALONEY. I, for one, am going to propose legislation that procurement officers be required to be involved in the procurement process. After all, that is their job. I could reminisce about some experiences we had in New York City government when procurement officers were not involved in the process. We ended up with tremendous abuses of taxpayers' money.

I would like to conclude my questioning, Mr. Chairman, and to underscore what I believe is the duty of three generals to appear before this committee. I believe very strongly in a strong military, and one of my goals in Congress is to ensure that our military continues to be strong. But the military is supposed to answer to a civilian President and to the oversight of a civilian Congress. I feel that they should come to this Congress and answer these questions. Likewise, contractors who have received billions and billions of dollars from the Government of the United States, billions of dollars of taxpayers' money, should have the respect for their government from which they are benefiting to come to this body and answer questions. Thank you very much, Mr. Chairman.

Mr. CONYERS. Thank you, Mrs. Maloney. The Chair is pleased to recognize the ranking Republican member of the subcommittee, the gentleman from California, Mr. McCandless.

Mr. MCCANDLESS. Thank you, Mr. Chairman. I apologize for having to step out for a few minutes. I feel like the little Dutch boy with about 12 holes in the dike and only 10 fingers this morning.

Mr. Rodrigues, as I understand it, you and those who have been working with you have been pretty much on this program for the better part of the last 2 years; is that correct?

Mr. RODRIGUES. Yes, it is.

Mr. MCCANDLESS. Does that take up a major part of your time?

Mr. RODRIGUES. A major part of the staff's time has been assigned to that directly, yes.

Mr. MCCANDLESS. So you come to the table with a certain level of knowledge, beyond that of maybe just investigating a certain aspect of a certain part of a GAO responsibility?

Mr. RODRIGUES. Oh, absolutely. I think we have been on this now for 5 years.

Mr. MCCANDLESS. So when we talk in terms of production schedules, we talk in terms of performance levels and so forth, you feel comfortable in discussing those things?

Mr. RODRIGUES. Yes, sir.

Mr. MCCANDLESS. Good. McDonnell Douglas had pointed out, and I might say, Mr. Chairman, all this might be moot based upon a comment Mr. Murtha, who is chairman of the Subcommittee on Defense Appropriations, that the C–17 has been nixed. It is our understanding indirectly that this is the reason why McDonnell Douglas is not here this morning, because of Mr. Murtha's comments

that the—he is quoted here as saying, "The C–17 is gone. I have come to the conclusion we just can't afford it. If they put it in the defense budget mix, I am for killing it," Murtha said as the House Government Operations subcommittee opened another critical examination——

Mr. CONYERS. Would the gentleman yield? That would seem to me a good reason for him being here, not for not being here.

Mr. MCCANDLESS. I might add that this appears in March 17 edition of the National Journal's Congress Daily, for whatever value it is. I don't see that it is necessary to put it in the record. It is just a reference point here.

With respect to the production, and we are talking here about the overall program irrespective of what ultimately happens to it, and I have a concern that goes beyond the C–17, and that is this government's ability to respond to the commitments that it has made all over the world, and its ability to fulfill those commitments at minimum expense to life and limb on the part of those who are actually carrying out the commitment.

I am coming from a situation here. I don't want to get personal, where I was the product of a cranking up of the services after World War II to make a commitment in Korea. It was a pony and dog show beyond belief, where things broke down, the various and sundry activities militarily had to be postponed because equipment and manpower couldn't get there, et cetera.

And because of that and the lack of readiness, a lot of people were killed in Korea that didn't have to be killed. As typified by Desert Storm, we were there prepared, we had the equipment, we had the training. The two are at each end of the spectrum. This is where I am coming from, because of my personal experience.

We have a C–130 which is like a gooney bird in today's real world. It takes 14 hours for that plane fully loaded to go from Andrews Air Force Base to Lima, Peru. Having done that a couple of times I can speak with authority in my assignment here in the Government Operations Committee.

We have the C–141 which is being retired as quickly as possible because of all of the things that we talked about yesterday, where rivets began to get loose in sockets and so on and so forth and the air frame reaches its maximum degree of efficiency relative to the number of hours the plane is flown.

My understanding is that they are going to be retiring in the Air Force Reserve the C–130 and replacing those with the C–141's in these reserve components, of which one is an Air Force base in southern California. That means we have the C–5 left, and we have the K–10's which can also be used as cargo-carrying planes in addition to refueling, and we also have the CK–135, which is the old 707, which can be used, but it is in worse shape than the rest of them.

Now, it would appear that we have here for some future purpose a lack of ability to move men and material on very short notice to a critical point of which we have committed ourselves either in terms of a unilateral or United Nations activities.

Having said that now with respect to your investigation here, how do you see this quick lift capability that we have, without something on the drawing board and coming off the assembly line?

Mr. RODRIGUES. Let me just say one thing. We acknowledge there is clearly a need for additional airlift capability. The question is, is the C–17 at its current cost and its current schedule problems the right answer? Have we really taken a hard look at that? Is that really the way you want to go.

Mr. MCCANDLESS. I understand that.

Mr. RODRIGUES. To us that is the real issue.

Mr. DENOMME. I would also say in terms of some of the things you have brought up, the KC–10's and their capability for airlift is something that I think needs to be incorporated, which I don't think has been totally incorporated in the past.

You have talked about the retirements of the C–141, we recently issued a report discussing the problems that have existed with the 141, and we recognize that if that plane is to be retained in the inventory, there are obviously things that need to be done with it.

I don't think what Mr. Rodrigues was saying or what we are saying here is that we don't have a need for airlift, or that we shouldn't be looking at what can be done to fulfill that need, but rather to take a hard look at whether the C–17 is the only answer to that airlift need.

There has been some discussion, I know, of the potential for extending the life of the 141's. That was raised by the DOD IG. We are not in a position to say whether that is a good or bad idea. But I think that is something that should be or could be looked at. There are, I think, other potential options which we believe need to be looked at along with the C–17.

But I wouldn't want you to conclude from what we have said that we are saying that there isn't a need for airlift. We recognize it, it is critical, and it is critical to this report.

Mr. MCCANDLESS. Good. Now we can start from there and kind of build on that. If the C–17 isn't the option, then maybe we should buy some 747's and convert them over or something, make sure that the rivets are all good, because people have trouble with rivets. I meant that facetiously. But back to this program, which is the purpose of this hearing, McDonnell Douglas has said, and the gentleman, Mr. Jenne, yesterday talked about savings and production. And McDonnell Douglas says that their P–4 model, that would be the production 4 plane, took only 60 percent of the time required to assemble a P–1, and that the amount of out-of-place work decreased from 69 percent on the P–1 to 6 percent on P–9. How would you respond to that?

Mr. RODRIGUES. I would say that those are correct figures. There is no question about that. But clearly McDonnell Douglas and the Air Force are going to continue to put forth the rosiest possible picture with regard to the production of this aircraft. I would like to point to the numbers we used in our statement regarding the amount of rework and repair that is basically having to go on. That has not declined; that has stayed. It is declining for the overall total per aircraft. I have got a chart here that McDonnell Douglas and the Air Force would like to use as a measure of the efficiency.

What the chart shows you is that assembly—this is for assembly portion only. The actual rework and repair cost per aircraft is declining. That is a true statement. But what they don't like to show you is the chart that shows, and this is their chart, this is all their

information, a chart that shows that the average or the number of hours of rework and repair cost per 1,000 hours of touch labor, it is actual hands on labor. What this chart shows is that from P–1 it dropped to P–2, but then it has been on the increase for P–3 and P–4. I don't have P–5 data, because it was just delivered. So in effect they are spending 40 percent of their total hours working on these planes fixing things that shouldn't have been wrong in the first place.

They are having to work quality in at the end of the process instead of having built it in.

If you work with 40 percent rework in your structure, you are just not going to get there. And they haven't demonstrated the ability to deal with that issue.

The other thing is, if you look at the learning curve, and this is what we have been watching too, the learning curve has remained flat. You are getting better on total hours per aircraft, but the learning curve is a flat curve. They need to get on the slope of that curve, so they are having far less rework.

Mr. MCCANDLESS. Is the flat part of that learning curve due to the need to correct the deficiencies?

Mr. RODRIGUES. To some extent. It is not just correcting deficiencies. We have other factors. We have personnel turnover, which we talk about in the detailed record. We continue to face that problem. They recognize that in the coming year they are looking at 40 to 50 percent turnover. It is hard to get good learning curve when you have to retrain new people coming in. That is a function of their labor contract. They are stuck with that. It looks like that is going to continue in the future. How you get to that learning curve is a difficult problem. But if you don't, these are not going to be cheap planes.

Mr. MCCANDLESS. For purposes of our discussion, let's assume that the contractor completes its work on lots 1 through 3 without additional government funding, but ends up losing $1.5 billion or whatever the figure may be on the deal. They have delivered to the Federal Government what it was they said they would deliver for the amount of money that was in the original contract. Obviously, certainly modifications in that contract have taken place in the interim.

Would you expect those losses to affect the future production of the contracts down the line and McDonnell Douglas's ability to move forward on that?

Mr. RODRIGUES. Yes, sir. The basis for negotiation, negotiations are based on actual costs, therefore I would certainly expect that the negotiation for future lines would reflect increases as a result of that, yes.

Mr. MCCANDLESS. I didn't quite catch that last part.

Mr. RODRIGUES. When you are negotiating you are going to base your negotiations on actual costs incurred. They clearly incurred a lot of costs already, and they know what those costs are. When they sit down and negotiate new prices for future contracts, those costs are going to be reflected in those negotiations, absolutely. I would expect them to recoup some if not all of that loss suffered under that contract.

Mr. MCCANDLESS. This was talked about yesterday, where they take R&D and put it into production, and the production represents the overall cost from which they benefit, then, with respect to future airplane price, which is in essence what you are saying, if I understand you correctly.

Mr. RODRIGUES. Yes.

Mr. MCCANDLESS. When one is negotiating on such an activity, it would appear to me that with all of what has taken place in the way of problems, real, imagined and otherwise on this project, that the Federal Government would be in a fairly favorable position to negotiate further production of this item on a per cost unit basis than maybe under a normal type of activity. I am thinking in terms of, we will order 50, and this is the price we will pay, take it or leave it. The government has no further obligation, right? After they——

Mr. RODRIGUES. After the current amount that we have on contract already.

Mr. MCCANDLESS. Yes.

Mr. RODRIGUES. Right.

Mr. MCCANDLESS. So we are not stuck with a per unit cost based upon what has taken place in terms of the production and the lack of the company's ability to produce this product efficiently, and the transfer of—allegedly funds from R&D to production line cost or funding, right?

Mr. RODRIGUES. Let me try two parts to that thing.

Mr. MCCANDLESS. Am I tracking for you?

Mr. RODRIGUES. You are tracking, but the fact of the matter is McDonnell Douglas is not in business to lose money, so I find it difficult to understand how they would want to take on additional contracts if, in fact, it meant they weren't going to make a profit. Clearly they are in business to make a profit. You are getting into negotiations with the contractor. Then you get back to the culture. It depends on who is going to negotiate this for you.

Clearly the Air Force would like to get as many C–17s as they can. Up until now, they have masked the problems with cost and schedule. The schedule problems are on the table. They have yet to tell you about the cost problems. They acknowledged that last week in hearings, that the costs are going to be laid out pretty soon.

I just don't see where the culture drive is there that they are going to hold McDonnell Douglas' feet to the fire in terms of price for some future lot, unless you are going to get somebody else to do that for you.

Mr. MCCANDLESS. I want to go into one aspect of what is referred to as the inappropriate payment criteria. This is not something I spend every day in, so you may have to amplify this a little bit for me. In the area of this, the fact that the estimate at completion was devised as a payment schedule, and then at a later time there was a new payment scheme devised which allegedly would assist McDonnell Douglas. It was called monthly estimate of completion, which compared the contractor's actual monthly expenditures with the estimated expenditures.

And it was at this point that people who evidently had the responsibility onsite representing the Air Force balked and said, I

can't buy this program, and so I am going to reject what it is you in Washington or at the higher levels want me to do.

Are you familiar with this area?

Mr. RODRIGUES. I am familiar with EACs and how it affects progress payments. I am familiar—I believe you are referring to the ACO at the time rejecting the estimate that was the basis for——

Mr. MCCANDLESS. As I understand, a replaced EAC is a means for payment which is favorable to McDonnell Douglas. That was a critical point at which those onsite said, I can no longer go along with what you fellows higher than me want from me.

Mr. RODRIGUES. I think what you are referring to is a spend plan, kind of a scheme on the part of the—a spend plan was not considered valid for purposes of estimating progress payments. It was rejected. I am not really that clear on——

Mr. DENOMME. To our knowledge it was a monthly estimate to complete—was a suggestion made, but rejected by the DPRO and the administrative contracting officer as not being valid for estimates for making progress payments. I am not 100 percent familiar with that. If we could get information and clarify it for you for the record——

Mr. RODRIGUES. We have all the information, I am sure. If we could work with it, we could get you the answer. I believe what you are talking to is a proposal that McDonnell Douglas would have liked to have seen implemented which basically said if you use my monthly estimates to complete, which effectively is my spend plan, you get more favorable results for McDonnell. I think that is what you were referring to. That was never accepted.

Mr. MCCANDLESS. Without being redundant, when the individuals personally responsible for the payment of the contract refused to provide payments on the basis of estimated—an estimate at completion, EAC, then this new plan was devised by those of higher authority, as I understand it. The monthly estimate at completion was this new plan which compared the contractor's actual monthly expenditures with the estimated expenditures, rather than focusing on the value of the work completed or the performance measurement and the overall progress.

Mr. DENOMME. It is our understanding——

Mr. MCCANDLESS. You fellows should be pretty hip on this. GAO has accounting in it.

Mr. RODRIGUES. I can tell you all about EAC's and what they are doing.

Mr. DENOMME. What you are referring to, as I understand it, was a plan that was devised and proposed from Air Force Washington, but was rejected by the DPRO, the administrative contracting officer, as not being a valid way for them to compute and pay progress payments.

Like I said, we could get more detail for you, but my understanding of what you are talking about is that particular plan that was put forward and rejected.

Mr. RODRIGUES. We are aware of it, but we wouldn't have followed up on much detail because that was never accepted. That was a proposal, it was laid on the table, and it was rejected. So ex-

actly the details of how it would have worked become really not an issue.

Mr. MCCANDLESS. Mr. Chairman, with your permission, I would like approval to submit to the gentlemen questions in writing which would save us a little time here.

Mr. CONYERS. Without objection, we would like to keep the record open for any members who would like to add questions.

Mr. MCCANDLESS. Let me finish with this: With the time you have invested in this, there are two areas the testimony brought up that I would like your comments on. The first, this is not a new and mysterious plane. It is not something that is like a space shuttle, that hasn't been built before in some form, shape or another. And to give you examples of that, there was what was referred to as a Y–C–15 15, which was a plane that was designed by Douglas in the 1970's, which had some of the component engineering in it that appears now in the C–17.

I was told at the hearing yesterday that the nose section of the C–17 comes from the DC–10 or the KC–10 10, and obviously other components, from experience, come from other types of equipment.

What in your mind is the inherent overall problem here that caused all of this to reach the point that it has now with ability and production and delivery date problems?

Mr. RODRIGUES. Most of it tied back to the integration of the different technologies, as well as the amount of computer software required. You are not going to find another cargo plane with the amount of computerization to make this thing work——

Mr. MCCANDLESS. Computerization, on board computers?

Mr. RODRIGUES. In the flight system as well as the loading systems. This thing is supposed to be flown with a crew of three people. One man is supposed to be able to load and unload it. That requires a lot of computerization. If you want to get into all the details on the software, Mr. Stephenson has been doing that work. He will be glad to answer where we stand on all the software problems, but this is a software intensive cargo plane.

Mr. STEPHENSON. Software is kind of a mundane subject and not something that everyone wants to talk about, but for all these aircraft, it is critical to their performance. This aircraft is basically a flying computer. It has 56 different subsystems in it, 80 microprocessors, and 1.3 million lines of code. It is a highly computerized aircraft, largely because the Air Force is trying to reduce the number of crew spaces. So the idea is to replace the crew with intelligent computers; computers that will presumably perform the functions of a navigator, a flight engineer, and other crew members.

So software is kind of a microcosm of the overall program—problems with the software usually lead to problems with the program.

Mr. MCCANDLESS. Let me give you a hypothetical here for purposes of our discussion. As I understand the origin of this project, someone went around and said to the various services, what would you like to see in the way of a cargo plane, and this service said this, and this service said this, and this service said this. And, see, they went back and set up what it was that would be the criteria in the original bidding process.

It would appear to me from what you and other people have said that the criteria was trying to be all things to all people, and that as a result, it fell on its face to the degree that we are sitting here. It was too sophisticated, and it needed to be more basic in its operational mode. And as a result, we have the problem of putting all this together into one unit to satisfy basic criteria.

Is that a fair statement?

Mr. RODRIGUES. I think that is a very fair statement. I think what adds to a lot of the problems is clearly the management problems McDonnell Douglas had on this program itself, internally. So it is all the things you said, and then that gets compounded by the problems they were having just building the plane.

Mr. STEPHENSON. I think your point is well taken. Early on there was a feeling this was simply another airlift aircraft, we have built a lot of them in the past. The Air Force and McDonnell underestimated the complexity of the aircraft and its software and that is partially the reason for the ineffective management of this program.

Mr. MCCANDLESS. Thank you very much. Thank you, Mr. Chairman.

Mr. CONYERS. You are very welcome.

The Chair recognizes the gentlelady from Florida, Ms. Brown.

Ms. BROWN. Thank you. I have a couple of questions, but I want to continue on the line about the software.

Can you characterize the problems that we have been having with the software with the C–17, and why is it so important in this particular plane?

Mr. STEPHENSON. Like we have already said, a lot of the crew stations were replaced with software. This is a highly computerized aircraft. It is basically a flying computer. McDonnell had several problems along the way. They have several subcontractors building difficult pieces of software. The difficulty comes in trying to integrate all these software pieces later. So what has happened is they have continued to delay completion of the software. The original aircraft, the test vehicle, T–1, was supposed to have 100 percent of the software on it. It didn't, of course. It had about 42 percent. So the Air Force waived the software requirements and kept passing those requirements down the line, first to the P–1 aircraft, then to the P–2 aircraft, and now the P–5 aircraft which was delivered last week. So they say the software is 90 to 95 percent complete. The sounds fairly complete, but it is a little bit misleading. You have to realize that all that software is yet to be tested, integrated into one unit on the aircraft and retested. It has to be reinstalled on the P–2 aircraft, reflight tested, and then validated again.

P–5 was accepted last week still with some missing software. More importantly that missing software represents critical functions—short takeoff and landing, air drop—many features that this aircraft was sold on. So we are not out of the woods yet on software, despite what the Air Force may say.

Ms. BROWN. I still am confused as to why we didn't get it right.

Mr. STEPHENSON. I think early on both the Air Force and McDonnell underestimated the complexity of what they were trying to do. For example, the electronic flight control system, which is needed to fly the entire aircraft, is only one of the 56 onboard sub-

systems. But, McDonnell hired a contractor several years ago that had no experience in electronic flight control systems. So when the subcontractor couldn't do the job, they had to get rid of that subcontractor, and hire another subcontractor more experienced in flight control systems. It is things like that that have happened along the way.

Ms. BROWN. Mr. Rodrigues, I am reading your—Mr. Rodrigues, on page 27—this is your testimony: In keeping in line with all of the problems, should we continue to accept this aircraft until all of these questions are answered? That is my first question.

Mr. RODRIGUES. I am sorry.

Ms. BROWN. We have gotten four. So should we continue to accept this aircraft at the cost of $300 million to $350 million per aircraft, even though it is supposed to be sophisticated?

Mr. RODRIGUES. Let me try to break that up. For the ones that are already on contract, it is very difficult not to accept them. We are on contract already for——

Ms. BROWN. Do they perform?

Mr. RODRIGUES. Do they perform?

Ms. BROWN. Yes, sir.

Mr. RODRIGUES. Partially through—they are most of the way through development testing. We are still in the static testing on the wings. We have got the durability testing to go. The Air Force claims they have completed only 1 percent of the operational tests. Until all that testing is done, you are not going to know the answer to the question of whether or not this thing really works.

Ms. BROWN. Which is buying a pig in a poke.

Mr. RODRIGUES. Now you are into the concurrency issue. This is the way we buy planes right now. As long as we have this concurrency in these programs, you are pretty much always buying everything in as a pig in a poke and hoping it is going to work when you test it properly.

Ms. BROWN. Keeping in line right sizing, downsizings, all of the other things that we are doing, do you think that we should cut our losses now?

Mr. RODRIGUES. Once again, regardless of the downsizing, the issue of airlift is still an issue. We need airlift. Clearly.

Ms. BROWN. Can we afford this plane?

Mr. RODRIGUES. That is the same question I have. What we need to do is step back from this thing before we commit more funds to it and look at it. Do we need all the sophisticated capabilities this plane is supposed to provide in light of the changes in the world, in light of the changes in the threat, and particularly in light of the fact that this plane costs so much now, would we even use it as we intended to use it originally?

Ms. BROWN. So what is your recommendation?

Mr. RODRIGUES. My recommendation is I wouldn't put any more money into it right now until I answer the basic questions I just laid out.

Ms. BROWN. So you would cut your losses now?

Mr. RODRIGUES. I would stop investing until I make sure this is the right plane for the right mission.

Mr. STEPHENSON. I think we are saying that we should at least slow down to see if the problems can be fixed.

Ms. BROWN. Slow down?

Mr. STEPHENSON. Yes, because over half the aircraft are going to be on contract by the time the test program is complete. We are buying too many aircraft before we know if the system works. That is the concurrency issue we are talking about.

Ms. BROWN. You know, I have a problem. When you are talking about slow down, when we are talking about $6 billion or $8 billion, that is a lot of money. And to get this program up, we are talking about $35 billion.

Mr. RODRIGUES. You are into it already—the numbers you threw out, you have already—we have already appropriated $13.3 billion to this program.

Ms. BROWN. We have already spent that?

Mr. RODRIGUES. The spent is lower than that. We have appropriated that much. I am not exactly sure—clearly over $7, $8 billion by this time. If you terminate today, there are a lot of termination costs. You need to answer the question, do we need to have this plane first, and then make a decision. I have real questions about whether this is the plane for the mission of the future, whether it is the only alternative.

If you answer those in the affirmative, then at what cost, becomes the question.

Ms. BROWN. My question is can we afford it? Can we afford this? It is like a Cadillac.

Mr. RODRIGUES. You bet. It is a Cadillac. It is a very expensive plane that can do all kinds of things, and you have to really wonder, do you need a Cadillac to do this job, and that is the question we have.

Mr. CONYERS. I thank the gentlelady for her astute questioning. She has been very, very helpful.

The Chair observes that the gentleman from California, Mr. Horn of Long Beach, is here in the hearing room, has attended faithfully yesterday's hearings, and is here again today. And the Chair would inquire whether the gentleman desires to ask any questions of the witnesses.

Mr. HORN. I would like to ask a few, Mr. Chairman, but I know we have a vote on. Might I ask when we return?

Mr. CONYERS. We are not going to return.

Mr. HORN. I see. All right. Let me ask a couple of questions. The rest we can file for the record.

It was mentioned earlier by you and your staff that we need to pursue and assure ourselves that this is the right option if we are going ahead. Let me ask you a further question on that. I understand that the Joint Chiefs of Staff have endorsed the C–17 as the most effective cost-effective option for our airlift needs. As far as you know, is that accurate, or do you disagree with that recommendation of the Joint Chiefs of Staff?

Mr. RODRIGUES. I am aware that they made that recommendation recently. You should also be aware that they are in the middle, the department is in the middle of doing a study or has begun a study that was directed by the 1993 Authorization Act asking the questions, asking them to set up organizations or task organizations to review the basic requirements for the program, to look at the cost and operational effectiveness of the program, and also look

at the affordability issue, getting back to Ms. Brown's question. I believe they are supposed to provide those answers later this summer. I think we need to step back and take a hard look at those analyses.

The fact of the matter is the same people that are doing that, I mean, this is still the Air Force, they are also the ones that paint these rosy pictures. They want this plane. And we show through the earlier discussion we had that clearly they do what it takes to get the plane delivered. We would be taking a very hard look at that analysis to make sure it covered the options and addressed them appropriately.

Mr. HORN. I sit on the Aviation Subcommittee and we just went out to look at another system, highly computerized, the automated system for our airport control towers. And, of course, that is about 19 months behind schedule, several billion over, et cetera. That involved, as you suggested here, extensive computerization, software integration of numerous systems and so forth.

Let me ask you, having given that other example, is it unusual for a major defense procurement program to experience technical problems such as this, and then have schedule slippages during the development? It seems to me it is pretty common. What do you think?

Mr. RODRIGUES. I would agree with you that it is common. That is why the problem that you deal with, though, is it becomes an issue of concurrency. I don't have as many concerns dealing with developing something and getting it right and then producing it. But by the time you know whether this is right or not you are going to have bought over half of the airplanes that you intend to buy under the total purchase, and at that point it is a little late to answer the question.

Mr. HORN. One last short question. Has McDonnell Douglas ever been reimbursed for anything other than work performed?

Mr. RODRIGUES. Not to my knowledge.

Mr. HORN. In other words, every dollar they have received at this point is based on what they have actually done?

Mr. RODRIGUES. Yes, sir.

Mr. HORN. So no one has given them money beyond that?

Mr. RODRIGUES. Not to my knowledge.

Mr. HORN. Very good. Thank you very much.

Mr. CONYERS. Gentlemen, we thank you very much. Make it short.

Ms. BROWN. It is very short. No one has given McDonnell Douglas any money they did not deserve. Did they get it before they deserved it?

Mr. RODRIGUES. That part of the answer is, yes. They got money before they should have gotten it. They would have eventually gotten the money, but, yes, they clearly got payments earlier than they otherwise should have, which is some financial assistance.

Mr. CONYERS. Gentlemen, we thank you very much for your testimony.

Mr. RODRIGUES. Thank you, Mr. Chairman.

Mr. CONYERS. Is John F. McDonnell in the hearing room?

On February 11, 1993, the subcommittee requested by letter Mr. McDonnell's presence at the investigative hearing. His personal in-

volvement in meetings and alleged threats relating to the funneling of inappropriate payments to his corporation are highly relevant to this inquiry.

The manner in which he has dealt with this subcommittee since that letter has been less than candid, has shown contempt for the American taxpayer and the democratic process, and has frankly added insult to injury last week. Over a month after receipt of our letter requesting his appearance, Mr. McDonnell indicated he would like to delay his appearance because his chief financial officer would be unavailable. We had a variety of explanations as to why the chief financial officer would be unavailable.

Finally, we learned that he was on vacation. After being informed this past Monday that his presence would be required at the hearing, Mr. McDonnell requested a personal meeting with the chairman, myself, for the purpose of discussing his role in the hope that he might be excused from appearing before the subcommittee.

We were informed at that time that if the subcommittee still requested his appearance after that meeting, he would appear. Yesterday, Mr. McDonnell informed the subcommittee he would not appear. It seems that Mr. McDonnell does not object to receiving about $10 billion of government money per year, but when called to explain his actions before a subcommittee of the Congress, he leaves the taxpayer with an empty chair.

Yesterday we heard testimony from the Department of Defense inspector general and the General Accounting Office. The conclusion was that the Defense and Air Force officials may have violated both statutes and regulations in their efforts to sell this program to the Congress. Both the GAO and the IG have recommended suspending production of the C–17. We heard testimony from a former McDonnell Douglas official who revealed that the company apparently knew in 1990 that there would be a $1.5 billion overrun on the C–17 development contract.

At the same time, the corporation was publicly telling its stockholders and the American people that the C–17 contract would not lose money. A shadow has also been cast over the integrity of both McDonnell Douglas and the Air Force. There is no program so valuable as to be above the law. And no program is worth paying for with the integrity of the armed forces.

Where there are such serious questions, normally one would expect those involved to come forward and provide an explanation. Both the Air Force and the McDonnell Douglas Corp. have refused to do so. Yesterday two senior Defense Department officials and three Air Force generals failed to appear before us. Today John McDonnell, the chairman, and Herbert Lanese, its chief financial officer, have also refused to appear. These witnesses can provide testimony vital to this subcommittee's investigation.

In an effort to avoid a confrontation, I personally met with Mr. McDonnell this week to afford him an opportunity to present any and all concerns. I believe that as a result of his conduct, that we must consider invoking compulsory process. I raise this alternative reluctantly, and of course, will again consider any reasonable accommodation to avoid unnecessary confrontation.

Nevertheless, I will convene a business meeting of the subcommittee on Wednesday, March 24, at 10 a.m. to consider the is-

suance of subpoenas to compel the testimony of the required witnesses from the McDonnell Douglas Corp. and the Department of Defense.

This subcommittee stands adjourned.

[Whereupon, at 11:15 a.m., the subcommittee adjourned, to reconvene subject to the call of the Chair.]

C–17 AIRLIFTER PROGRAM

THURSDAY, APRIL 22, 1993

HOUSE OF REPRESENTATIVES,
LEGISLATION AND NATIONAL SECURITY SUBCOMMITTEE
OF THE COMMITTEE ON GOVERNMENT OPERATIONS,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:30 a.m., in room 2154, Rayburn House Office Building, Hon. John Conyers, Jr. (chairman of the subcommittee) presiding.

Members present: Representatives John Conyers, Jr., Glenn English, Carolyn B. Maloney, Corrine Brown, Al McCandless, and William F. Clinger, Jr.

Also present: Representatives Stephen Horn and Christopher Shays.

Subcommittee staff present: Robert J. Kurz, deputy staff director; James C. Turner, associate counsel; Eric Thorson, professional staff member; Cheryl G. Matcho, clerk; and Monty Tripp, minority professional staff.

Mr. CONYERS. The committee will come to order.

The Chair recognizes Mr. McCandless, the gentleman from California.

Mr. MCCANDLESS. Thank you, Mr. Chairman.

I would like to join you in welcoming today's witnesses in this continuing review of the C–17. At our last hearing we learned of a program in turmoil. Cost overruns and schedule delays were said to have threatened the program's very existence and its vitality.

Since that time, news reports have once again indicated that the C–17 has turned the corner. All I can say, Mr. Chairman, is that this program must have a number of corners, since we continually keep turning them.

I hope today's witnesses can help us understand where the program truly stands. And I look forward to the hearing and our witnesses' testimony.

Thank you, Mr. Chairman.

Mr. CONYERS. Thank you.

Does the gentleman from Oklahoma, Mr. English, have any opening comments he would like to make?

Mr. ENGLISH. Very briefly, Mr. Chairman, I want to say this is a very disturbing program, and I want to commend you for continuing your vigilance with regard to this effort.

There is no question that in these times of tight budgets, we need to make certain that every tax dollar is well spent, and that is the primary mission of this committee. I appreciate the effort you are putting into it, Mr. Chairman.

Mr. CONYERS. Thank you very much.

Mr. Clinger, the gentleman from Pennsylvania, ranking minority member of the committee. Good morning.

Mr. CLINGER. Good morning, Mr. Chairman, and thank you very much.

As the chairman's past testimony has indicated, the C–17 is a plane that appears to be in serious trouble, costing more to do less, and it is behind schedule. But beyond these immediate concerns, hopefully, some of these other serious concerns which have been raised during our hearings previously can be addressed and perhaps somewhat alleviated this morning.

But I think beyond these immediate concerns, there are concerns about whether it was the right plane in the first place, and whether we ever should have gotten involved in this. And that question, if not answered, is going to be raised by Mr. Murray today, who first came to Washington, Mr. Chairman, as one of Mr. McNamara's brain trust in 1960, and after serving in the Pentagon under Presidents Kennedy and Johnson, he returned to serve as President Carter's Assistant Secretary of Defense for Program Analysis and Evaluation.

It was while working for the House Armed Services Committee that Mr. Murray reviewed the initial justification for the C–17, and to put it bluntly, he really believes the Air Force cooked the books in justifying this plane at the outset. He contends the underlying needs assumption for the C–X and C–17 were false initially and we bought this plane to meet unrealistic goals. The Air Force will be given the chance to refute those claims when it appears before us next week.

Nevertheless, I believe it is important that this subcommittee consider the full range of issues surrounding this plane's development, and certainly the reasons for its procurement should be somewhere near the top of that list.

So, Mr. Chairman, I appreciate your willingness to include Mr. Murray on today's list of witnesses. I thank you very much, Mr. Chairman.

[The prepared statement of Mr. Clinger follows:]

Opening Statement of the

Hon. William F. Clinger, Jr.

Subcommittee on Legislation and National Security

April 22, 1993

Mr. Chairman, as past testimony has indicated, the C-17 is a plane in trouble. It is costing more to do less, and it's behind schedule. More than that, however, is the question of whether it was ever the right plane in the first place. That question, if not answered, will at least be raised by one of our witnesses today.

Russell Murray first came to Washington as one of Robert McNamara's whiz kids in the 1960's. After serving in the Pentagon under Presidents Kennedy and Johnson, Mr. Murray returned to serve as President Carter's Assistant Secretary of Defense for Program Analysis and Evaluation. He later worked as a Special Counsel to the House Armed Services Committee in the 1980's.

While working for House Armed Services, Mr. Murray reviewed the initial Air Force justification for the C-17; and, to put it bluntly, he believes the Air Force cooked the books in justifying this plane at the outset.

Mr. Murray contends that the underlying needs assumptions for the C-X, or C-17, were false, and that we bought this plane to meet unrealistic mission goals. The Air Force will be given the chance to refute those claims when it appears before us next week.

Nevertheless, I believe it is important that this subcommittee consider the full range of issues surrounding this plane's development, and certainly the reasons for its procurement should be somewhere near the top of that list. Mr. Chairman, I appreciate your willingness to include Mr. Murray on today's list of witnesses. And Russ, I appreciate you making yourself available to the subcommittee, and your efforts to help us understand the history of this plane.

Mr. CONYERS. It is my pleasure to cooperate with you as always, Mr. Clinger. And I am happy to have the witnesses here with us.

The Chair now recognizes the gentlelady from Florida, Ms. Corrine Brown.

Ms. BROWN. Thank you, Mr. Chairman. I just want to commend you publicly for your leadership in this area.

During a time of downsizing and rightsizing, I think it needs to make sense. When we talk about rightsizing, we certainly need to be cost effective, cost efficient, and we have to realize that sometimes we can't buy the Cadillac anymore. We would better settle for the Ford and have it be cost effective.

So I am looking forward to these hearings and the testimony that we are having today so that we can see just where we are and where we need to go.

Mr. CONYERS. Thank you so much.

The Chair recognizes the gentlelady from New York, Mrs. Maloney, for any opening comments she may choose to make.

Mrs. MALONEY. Thank you, Mr. Chairman.

The last time that this subcommittee convened, I shared the outrage of many of my colleagues that witnesses—with key information about alleged waste in the C–17 contracts—refused to appear. I applaud your diligence, Mr. Chairman, in pursuing their appearance, and look forward to their testimony today.

The testimony by the Air Force inspector general and by officials of the General Accounting Office have been disturbing, to say the least. Those witnesses provided the subcommittee with a litany of technical flaws, production delays, and cost overruns that have led some people to start calling this contract "Cargo-gate."

Furthermore, and most troubling, the testimony of the inspector general alleged inappropriate overruns and overpayments for this particular contract. I hope the witnesses today and next week will provide convincing explanations as to why both the contractor and the Air Force insisted upon using highly questionable and inappropriate methods to effect an alleged overpayment or an alleged bail-out when legal tools were available.

We have heard now from the Air Force and the Defense Department how they spent an enormous amount of time and effort to protect the C–17 project. It is time that someone spent an equal amount of time and effort protecting the taxpayer.

Thank you.

Mr. CONYERS. Thank you very much.

The Chair is pleased to recognize the gentleman from California, Mr. Horn, for any opening comments he may have.

Mr. HORN. Thank you, Mr. Chairman. I appreciate your courtesy in allowing me to sit with the committee.

I have left another subcommittee on Government Operations and the problems of agriculture to do this. But I am interested in the outcome.

I am delighted that Secretary Aspin and the Joint Chiefs of Staff have recommended that six C–17's be produced in fiscal year 1994, and I am hopeful that the various witnesses from the services as well as the company involved will be able to allay any concerns the committee has, and that we can get the truth on the table and not

be dealing with either innuendo or allegations that really aren't well founded.

Thank you very much.

Mr. CONYERS. We are always delighted to have the gentleman from the district from which these planes are produced here with us.

This is a serious investigation of a troubled program. The American people have the right to hear from the Department of Defense, and its principal contractor. And here are the questions we need to have answered.

Did the Pentagon bail out McDonnell Douglas?

Did McDonnell Douglas know it would lose $1.5 billion or more on the C–17 in 1990 when it was at the same time telling stockholders that it would break even on the contract?

And finally, will the C–17 ever perform as promised?

This aircraft was designed to provide critically needed airlift capability to replace the aging airlift fleet. But at this point, it seems that what we are contracting for and what we are getting are two very different things.

In the last 2 years, with the help of the General Accounting Office and the Department of Defense inspector general, this subcommittee has uncovered major design weaknesses and deficiencies with the aircraft, and additionally we have unraveled a complex plan to secretly finance McDonnell Douglas.

The inspector general has documented that hundreds of millions of dollars were improperly, maybe illegally, provided to McDonnell Douglas for the C–17 alone.

During the last year of our investigation, we have received assurances by the Department of Defense and the Air Force that this was not done.

For over 1½ years, this subcommittee reported that the Department of Defense had gone to extraordinary lengths to keep money flowing to McDonnell Douglas. This was evident in the Navy A–12 aircraft program, with the subsequent deferment to the contractors of $1.3 billion due back to the government because of the termination of the A–12 by reason of default.

Only 2 weeks before, Mr. McDonnell personally sent a letter to the Defense Department asking for another $1 billion in the form of advanced payments. And during this same period, in the case of the C–17, the inspector general states, "Expedited government payments were made that exceeded appropriate amounts by $349 million. Financing provided also exceeded the fair value of undelivered work by an additional $92 million. Improper contracting actions reduced contractor financial risk on the C–17 program by $1.6 billion and created a false appearance of success to facilitate both the contractor obtaining additional financing through commercial sources and issuance of debt securities, and the Air Force securing additional funds from the Congress."

In other words, as I understand it, we bailed them out.

No program is above the law, and we are trying to develop citizen confidence in our military. And if we don't ask and get answers to the questions we are posing today, we have come very close to fulfilling President Eisenhower's worries about a military-industrial complex.

We begin with our first witness, Mr. William H. Reed, Defense Contract Audit Agency, accompanied by Mr. Gerald Bailey.

Gentlemen, if you will please stand and raise your right hand and take the witness oath as you have agreed to.

[Witnesses sworn.]

Mr. CONYERS. Your testimony will be incorporated in full and you may proceed in your own way.

Welcome to the hearings, Mr. Reed.

STATEMENT OF WILLIAM H. REED, DIRECTOR, DEFENSE CONTRACT AUDIT AGENCY, ACCOMPANIED BY GERALD LEE BAILEY, RESIDENT AUDITOR

Mr. REED. Good morning, Mr. Chairman and members of the subcommittee.

As you have requested, I am here today to provide information on the Defense Contract Audit Agency's analysis of McDonnell Douglas Corp.'s financial condition during the period 1990–91.

To put that audit work in perspective, I would first like to briefly comment on the major DOD programs involved in that period and how our audit responsibilities contributed to the department's administration of contracts awarded on these programs.

MDC was performing on major production programs for all military services and NASA during this period. These programs included the F–15 and C–17 for the Air Force, the F/A–18, A–12 and T–45 for the Navy, the AV–8B Harrier for the Marine Corps, the AH–64A Apache attack helicopter for the Army, the Advanced Cruise Missile and the Laser Crosslink System for the DOD, and the space station for NASA. The contractor's major commercial aircraft programs were the MD–11 trijet and the MD–80/90 twin jet.

Annual sales were approximately $16 billion in 1990 and $18 billion in 1991, of which 68 percent were to the government, making McDonnell Douglas Corp. the largest defense contractor in the country.

Several of these programs were being performed under fixed-price development contracts and most contained cost performance reporting requirements as well as progress payment provisions. Normal government contract administration procedures under these conditions included surveillance of the contractor's cost performance reports for cost, schedule, and technical problems, and evaluation of progress payment requests to assure that they reflect costs incurred and the expected rate of physical progress.

In addition, the contracting officer is expected to monitor the overall financial capability of the company and to anticipate any potential interruptions in contract performance and the risk that this might present to the liquidation of progress payments already paid.

DCAA plays a vital role in providing audit services and financial advice to the contracting officer in carrying out these contract administration responsibilities. Cost performance surveillance, including evaluation of periodic estimates of contract cost at completion, referred to as EACs, are important activities to assure that progress payments are based on physical progress and the contract and the relationship of the cost of such work to the contract price.

In other words, if both the contractor's cost and physical progress based on work to date as well as its EACs are within the contract cost and performance schedule, progress payments are received at the contract-prescribed percentage of the actual cost incurred. However, if cost incurred is estimated to exceed the contract value of work performed, indicating ultimately a higher estimate at completion than the contract ceiling price, each progress payment is reduced for the pro rata share of the anticipated loss.

During the period 1990–91, DCAA conducted extensive analysis of McDonnell Douglas Corp.'s financial condition and issued updated reports approximately every 6 months. Throughout this period, our overall conclusion was that McDonnell Douglas Corp. was in an unfavorable financial condition, which might adversely affect its ability to perform under government contracts.

Therefore, our audit reports recommended that the government corporate administrative contracting officer closely monitor MDC's financial condition by obtaining biweekly financial briefings from MDC, requesting administrative contracting officers to selectively scrutinize future progress payment requests to ensure they were computed in accordance with contract terms, and requesting ACOs to notify the CACO and DCAA corporate resident auditor of contracts requiring the use of a loss ratio to significantly reduce progress payments. DCAA management also instructed the auditors to scrutinize future progress payment requests for the same concern.

This opinion and our recommendations were based on analysis of MDC financial statements, current credit status, cash-flow projections, and known or potential contract performance problems which might affect such projections.

We found that the corporation's cash-flow requirements were dependent to a large extent on borrowed funds. These loan agreements contained restrictive covenants relating to net worth, liquidity, interest coverage, indebtedness, customer financing, fixed-asset dispositions, and subsidiary indebtedness.

The reduction of MDC's credit rating in 1990, the general tightening of credit worldwide and other factors made certain sources of borrowing previously available to MDC not available at the same levels and on acceptable terms.

Moreover, certain government fixed-price development contracts continued to experience cost and technical problems. Any failure to satisfactorily resolve these problems, as well as to reach a favorable disposition of the A–12 termination liability, could have had a material adverse effect on MDC's earnings from continuing operations and its ability to raise funds in the future.

Areas of uncertainty, at the time, which could have had a material adverse impact on MDC's financial condition, involved the A–12, C–17, and T–45TS programs.

The McDonnell Aircraft Co. [MDM] was part of a joint venture with General Dynamics [GD] which was performing on the Navy's A–12 program. On January 7, 1991, the A–12 program was terminated for default by the Secretary of Defense.

Following the termination, the Department of the Navy entered into an agreement with MDC and GD on February 5, 1991, to defer repayment of $1.352 billion of unliquidated progress payments

made to McDonnell Douglas and General Dynamics, pending the outcome of future litigation concerning the contractors' claims of $1.5 billion.

On June 7, 1991, MDC and GD filed a legal action to contest the default termination. In its 1990 annual report, MDC took a loss provision of $350 million and estimated additional losses of $850 million if the termination was not changed to a termination for convenience.

The C–17 Airlifter Program was being performed by Douglas Aircraft Co. under a fixed-price incentive contract which included full-scale development and lots 1 and 2 of production aircraft. The ceiling price on this contract was $6.6 billion. The estimate at completion had increased substantially since contract award, and the scheduled first flight date was also delayed significantly.

In 1990, the administrative contracting officer was using an estimate at completion of $7.1 billion for progress payment purposes which was a projected loss of $500 million. The EAC increased to $7.3 billion in July 1991 projecting the loss to $700 million.

As a result of this projected loss, the ACO reduced progress payments by $196 million as of September 12, 1991. These EACs were developed by the defense plant representative office at Douglas Aircraft Co. MDC disagreed with the DPRO's estimates and used different EACs for financial reporting.

McDonnell Aircraft Co. was also performing production and development work for the Navy T–45 training system. The full-scale development contract and the initial production contract for the T–45 were both experiencing significant losses due to cost, schedule, and technical problems. Progress payments were appropriately adjusted downward by $116 million as of September 1991 based on an estimated overrun of $142 million.

MDC's estimated revenues assumed significant recovery for equitable adjustment claims under the T–45TS contract. Claims filed totaled $281.6 million. The government did not acknowledge any liability for these claims, raising the possibility of greater losses on these contracts.

Other McDonnell Douglas government contracts experiencing significant cost, schedule, and technical problems included the Advanced Cruise Missile, the Tomahawk Missile upgrade, and the Laser Crosslink System. Progress payments on these contracts were also appropriately adjusted downward by an aggregate amount of $126.2 million as of July 1991.

The MD–11 trijet commercial aircraft was MDC's largest and most important financial investment. In 1990, MDC was financing a large inventory of six completed aircraft and several partially completed aircraft while awaiting FAA certification required for making deliveries.

At a selling price of over $90 million each, the financing of the work in process inventory was quite burdensome. The FAA certification was obtained in November 1990.

These were the major financial circumstances which MDC faced in the 1990–91 timeframe.

We have continued to monitor MDC's financial condition and issue update reports approximately every 6 months. Based on our

latest report, dated October 5, 1992, the contractor's financial condition continues to be unfavorable.

Mr. Chairman, that concludes my statement. I would be pleased to answer any questions you and members of the subcommittee may have.

[The prepared statement of Mr. Reed follows:]

STATEMENT OF

MR. WILLIAM H. REED

DIRECTOR

DEFENSE CONTRACT AUDIT AGENCY

BEFORE THE UNITED STATES HOUSE OF REPRESENTATIVES

SUBCOMMITTEE ON LEGISLATION AND NATIONAL SECURITY

OF THE

COMMITTEE ON GOVERNMENT OPERATIONS

APRIL 22, 1993

AUDIT ACTIVITIES OF THE DEFENSE CONTRACT AUDIT AGENCY REGARDING THE FINANCIAL CONDITION OF MCDONNELL DOUGLAS CORPORATION: 1990-1991

NOT FOR PUBLICATION UNTIL RELEASED BY THE SUBCOMMITTEE

Good morning Mr. Chairman and members of the Subcommittee. As you have requested, I am here today to provide information on the Defense Contract Audit Agency's analysis of McDonnell Douglas Corporation's financial condition during the period 1990-91. To put that audit work in perspective, I would first like to briefly comment on the major DoD programs involved in that period and how our audit responsibilities contributed to the Department's administration of contracts awarded on these programs.

MDC was performing on major production programs for all four military services and NASA. These programs included the F-15 and C-17 for the Air Force, the F/A-18, A-12, and T-45 for the Navy, the AV-8B Harrier for the Marine Corps, the AH-64A Apache attack helicopter for the Army, the Advanced Cruise Missile and the Laser Crosslink System for DoD, and the Space Station for NASA. The contractor's major commercial aircraft programs were the MD-11 trijet and the MD-80/90 twin jet. Annual sales were approximately $16 billion in 1990 and $18 billion in 1991 of which 68 percent were to the government, making MDC the largest Defense contractor in the country.

Several of these programs were being performed under fixed price development contracts and most contained cost performance reporting requirements as well as progress payment provisions. Normal government contract administration procedures under these conditions included surveillance of the contractor's cost performance reports for cost, schedule and technical problems and evaluation of progress payment requests to assure that they reflect cost incurred and the expected rate of physical progress. In addition, the contracting officer is expected to monitor the overall financial capability of the company to anticipate any potential interruptions in contract performance and the risk that this might present to the liquidation of progress payments already paid.

DCAA plays a vital role in providing audit services and financial advice to the contracting officer in carrying out these contract administration responsibilities. Cost performance surveillance, including evaluation of periodic estimates of contract cost at completion (EACs) are important activities to assure that progress payments are based on physical progress on the contract and the relationship of the cost of such work to the contract price. In other words, if both the contractor's cost and

physical progress based on work to date as well as its EACs are within the contract cost and performance schedule, progress payments are received at the contract-prescribed percentage of the actual cost incurred. However, if cost incurred is estimated to exceed the contract value of work performed, indicating ultimately a higher estimate at completion than the contract ceiling price, each progress payment is reduced for the pro rata share of the anticipated loss.

During the period 1990-1991, DCAA conducted extensive analysis of McDonnell Douglas Corporation's financial condition and issued updated reports approximately every six months. Throughout this period, our overall conclusion was that MDC was in an unfavorable financial condition which might adversely affect its ability to perform under government contracts. Therefore, our audit reports recommended that the government Corporate Administrative Contracting Officer (CACO) closely monitor MDC's financial condition by (i) obtaining biweekly financial briefings from MDC, (ii) requesting Administrative Contracting Officers to selectively scrutinize future progress payment requests to ensure that they were computed in accordance with contract terms and (iii) requesting ACOs to notify the CACO and the DCAA corporate resident

auditor of contracts requiring the use of a loss ratio to significantly reduce progress payments. DCAA management also instructed the auditors to scrutinize future progress payment requests.

This opinion and our recommendations were based on an analysis of MDC financial statements, current credit status, cash flow projections and known or potential contract performance problems which might affect such projections. We found that the corporation's cash flow requirements were dependent to a large extent on borrowed funds. These loan agreements contained restrictive covenants relating to net worth, liquidity, interest coverage, indebtedness, customer financing, fixed asset dispositions and subsidiary indebtedness.

The reduction of MDC's credit rating in 1990, the general tightening of credit worldwide, and other factors, made certain sources of borrowings, previously available to MDC, not available at the same levels and on acceptable terms. Moreover, certain government fixed price development contracts continued to experience cost and technical problems. Any failure to satisfactorily resolve these problems, as well as to reach a

favorable disposition of the A-12 termination liability, could have had a material adverse effect on MDC's earnings from continuing operations and its ability to raise funds in the future.

Areas of uncertainty, at the time, which could have had a material adverse impact on MDC's financial condition, involved the A-12, C-17, and T-45TS programs.

The McDonnell Aircraft Company (MCAIR) was part of a joint venture with General Dynamics (GD) which was performing on the Navy's A-12 Attack Aircraft program. On 7 January 1991, the A-12 program was terminated for default by the Secretary of Defense. Following the termination, the Department of the Navy entered into an agreement with MDC and GD on 5 February 1991 to defer repayment of $1.352 billion of unliquidated progress payments made to McDonnell Douglas and General Dynamics, pending the outcome of future litigation concerning the contractors' claims of $1.5 billion. On 7 June 1991, MDC and GD filed a legal action to contest the default termination. In its 1990 annual report, MDC took a loss provision of $350 million and estimated additional

losses of $850 million if the termination was not changed to a termination for convenience.

The C-17 Airlifter program was being performed by Douglas Aircraft Company (DAC) under a fixed priced incentive contract which included full-scale development (FSD) and lots 1 and 2 of production aircraft. The ceiling price on this contract was $6.6 billion. The estimate at completion had increased substantially since contract award and the scheduled first flight date was also delayed significantly. In 1990, the Administrative Contracting Officer (ACO) was using an estimate at completion (EAC) of $ 7.1 billion for progress payment purposes which was a projected loss of $500 million. The EAC increased to $7.3 billion in July 1991 projecting the loss to $700 million. As a result of this projected loss, the ACO reduced progress payments by $196 million as of 12 September 1991. These EACs were developed by the Defense Plant Representative Office (DPRO) at Douglas Aircraft Company. MDC disagreed with the DPRO's estimate and used different EACs for financial reporting.

McDonnell Aircraft Company (MCAIR) was also performing production and development work for the Navy T-45 Training

System. The FSD contract and the initial production contract for the T-45 were both experiencing significant losses due to cost, schedule and technical problems. Progress payments were appropriately adjusted downward by $116 million as of September 1991 based on an estimated overrun of $142 million.

MDC's estimated revenues assumed significant recovery for equitable adjustment claims under the T-45TS contract. Claims filed totaled $281.6 million. The government did not acknowledge any liability for these claims, raising the possibility of greater losses on these contracts.

Other McDonnell Douglas government contracts experiencing significant cost, schedule and technical problems included the Advanced Cruise Missile, the Tomahawk Missile upgrade, and the Laser Crosslink System. Progress payments on these contracts were also appropriately adjusted downward by an aggregate amount of $126.2 million as of July 1991.

The MD-11 trijet commercial aircraft was MDC's largest and most important financial investment. In 1990, MDC was financing a large inventory of 6 completed aircraft and several

partially completed aircraft while awaiting FAA certification required for making deliveries. At a selling price of over $90 million each, the financing of the work in process inventory was quite burdensome. The FAA certification was obtained in November 1990.

These were the major financial circumstances which MDC faced in the 1990-91 time frame. We have continued to monitor MDC's financial condition and issue update reports approximately every six months. Based on our latest report, dated 5 October 1992, the contractor's financial condition continues to be unfavorable.

Mr. Chairman, this concludes my statement. I will be pleased to answer any questions you and members of your Subcommittee may have.

Mr. ENGLISH [presiding]. Thank you very much.

I notice you ended your statement referring to your latest report, which was October 1990. Could you please explain why you feel McDonnell Douglas is in an unfavorable financial position even today?

Mr. REED. Our opinion is based on various financial indicators, and financial ratios, trends, and industry averages which indicate they are unfavorable compared to such standard indices.

As I have noted, there are continuing concerns on certain programs with major financial uncertainties. The debt levels of the company continue to be high, combined with negative cash-flow concerns, and reduced profitability. Although profitability has improved recently, performance problems are continuing.

Mr. ENGLISH. As late as last week the company, McDonnell Douglas, was still making the point that they expected that the C–17 was going to be profitable not in the long run but in this quarter.

Given the $1.5 billion overrun and that lot 3 is projected to go over ceiling, how in the world can they make that kind of profit projects?

Mr. REED. I am not aware of the basis of that projection. I could presume they are talking about one quarter's results only and not the cumulative program cost, but that is a supposition on my part.

Mr. ENGLISH. Does that make sense to you? Is that a little sleight of hand for the stockholders? Is that the purpose of that? Isn't it misleading as far as the general public's concern?

Mr. REED. If one would read that article and conclude that the C–17 program was going to become overall profitable in that quarter, yes, it would be misleading if one read it that way.

Mr. ENGLISH. In your opinion, was that the purpose of this kind of report?

Mr. REED. I believe companies typically publish financial information in a way which will reflect most favorably on the company.

Mr. ENGLISH. The inspector general gave quite a negative view of the journal voucher transfer which improperly reallocated the cost from accounts that had been exhausted to accounts that still contain funds. Could you please give us your opinion of that retroactive reallocation and the role your agency had in approving that transfer?

Mr. REED. We believe that that reallocation was inappropriate based on our latest audit work. At the time that the allocation was done, however, we incorrectly approved that reallocation, that journal entry.

The approval of that transaction was premised on a technical report that we received from the Air Force engineers, which provided to us a point estimate in time of which one could conclude that engineering effort would transition from nonrecurring to recurring. This was a critical point defining whether the cost could be assigned to the development portion of the contract or to the production portion of the contract.

At the time, the development portion of the contract was running right up against funding ceilings, and therefore was being constrained in terms of future billings by the company because of funding constraints. The issue is quite complex because of the high

degree of concurrency on the program with engineering effort of both a nonrecurring and recurring effort, occurring simultaneously within the same work breakdown package work definitions. The issue to this point still remains unresolved, unfortunately.

We have recently received a final technical report from the Air Force program office which is going to serve as the basis once and for all, I believe, for determining the proper allocation of these costs.

Mr. ENGLISH. Is it your opinion that your agency was deliberately misled to come to this conclusion?

Mr. REED. I believe that we were deliberately misled.

Mr. ENGLISH. Who devised the retroactive reallocation? The contractor or the Air Force?

Mr. REED. The facts that I have seen on that are really based on secondhand information. I believe it is alleged by the company that this idea originated with the Air Force. I do not have any facts myself to substantiate that.

Mr. ENGLISH. How much money was actually transferred?

Mr. REED. $171 million was transferred by the journal entry.

Mr. ENGLISH. The number has grown quite substantially since then. How much has been transferred as of today?

Mr. REED. I believe the number is in the range of $400 million at this point—on the basis that the contracting officer has decided that until this issue is resolved in terms of the proper classification of the cost, he is insisting that all of the engineering costs be accumulated against the development portion of the contract.

I think both us and the contracting officer recognize that some portion of that cost is appropriately allocable to the production sides of the contracts, including lot 3.

Mr. ENGLISH. Is it true that this particular method of building development cost to future production contracts is still going on?

Mr. REED. The company is continuing to assert that its definition, its point in time estimate is correct, and they are continuing to submit billings on that basis.

Mr. ENGLISH. Is the Air Force going along with that?

Mr. REED. No, it is not. The administrative contracting officer, as I stated a moment ago, is adjusting all the billings to reflect that the costs were incurred against the development portion of the contract.

Mr. ENGLISH. So this is only a claim by the contractor, not by the Department of Defense? The Department of Defense is not accepting that claim; is that correct?

Mr. REED. The Department of Defense is not recognizing that at this point.

Mr. ENGLISH. Doesn't all this mean that the costs which should have been paid by McDonnell Douglas under the original development contract are being shifted to the taxpayer?

Mr. REED. The question, I think, has to be viewed this way. The costs were incurred. We are talking about appropriate incurred cost. The timing of when that cost can be recognized was effected by the incremental funding constraints of the contracts.

So one is talking about the timing of when the costs will be recognized depending on when funding is available; and second, the ceiling prices which apply to each segment of the contract—and to

the extent that the costs are classified one way or the other, the loss ratios could be affected as well as the timing of the payments.

Mr. ENGLISH. Doesn't this really get down to the question of research and development? Is McDonnell Douglas over the ceiling as far as research and development is concerned?

Mr. REED. Yes, they are.

Mr. ENGLISH. So does not this procedure then allow them to shift those costs and instead of having to pay those costs themselves, they are in fact able to shift that to the taxpayer?

Mr. REED. At this point in time, the contract is overrun very severely. I believe the loss ratio is approximately 82 percent on the development portion of the contract at this time, so it becomes more an issue of any claims that they might probably have outstanding in terms of recovering some portion of that loss.

Mr. ENGLISH. But again, does this not get down to the question of ceilings? Once those ceilings are exceeded in certain categories, if they are able to shift the cost, then the company does not have to eat those costs and instead are able to shift those to the taxpayer? And that is not the intent of the procedure, is it?

Mr. REED. They would be over the ceiling on this portion of the contract whether this money was shifted or not. The effect of the shift at the time it was done permitted them to continue to bill additional costs because under the funding ceilings of the contract; not the ceiling price of the contract but the obligated funding of the contract, which is a timing issue.

Mr. ENGLISH. I recognize that. But still at that particular time, what it actually means is instead of McDonnell Douglas having to pay those costs at that time out of their pocket, they are able to shift those to the taxpayer?

Mr. REED. At that point in time, they were able to bill those costs to the taxpayer as a result of that transaction.

Mr. ENGLISH. And is that approach continuing today?

Mr. REED. That approach has not continued today because the government has refused to recognize that journal entry. The ACO has reversed the cost. We have applied a loss ratio to the contract and really it becomes part of the loss at this point.

Mr. ENGLISH. So in effect what we have today is that McDonnell Douglas is billing for that purpose but the Department of Defense is refusing today to recognize that billing?

Mr. REED. That is correct.

Mr. ENGLISH. Mr. McCandless.

Mr. MCCANDLESS. Thank you, Mr. Chairman.

First, Mr. Reed, thank you for appearing. One of the things I have concern about is a small issue, I understand your position as it relates to the Defense Department—the rule of the committee is that we receive testimony 48 hours in advance. That gives us an opportunity to examine the various aspects of what a person is going to say beforehand. We did not receive your testimony until this morning.

I realize it has to be passed through the chain of command of the Defense Department. I realize also that the Office of Management and Budget has to see it. But if you would take this thought back to those people you report to, I would appreciate it, as I am sure the other members of the committee would.

Let me ask you, relative to Mr. English's discussion, when we talk about cost overruns and research and development, then production, and we are over budget and we have borrowed from research and development—or from direct production to research and development, does this have a direct impact upon future costs per unit sales when the next group of planes, if it happens, is built? Is my question understandable?

Mr. REED. I believe I have the gist of it, and if I don't answer it, if my answer doesn't reflect that, please clarify and point me in the right direction.

I believe that the effect of this particular journal entry primarily was to effect the timing of progress payments. It did not add any new cost to the overall effort that had been performed. But the issue was, under what portion of the contract should it be recorded, and what are the funding limitations at that particular time affecting that portion of the contract.

Now, if one would argue that none of this should be on the development contract, it should all be on the production contract, then it would reflect how costs were estimated for the future aircraft in terms of pricing continuing work. If the sustaining engineering cost were $171 million higher than it is currently being recognized by the government, say, on lot 1 and 2, the cost per aircraft unit-wise, of course, would absorb that $171 million, and then that might be used to estimate subsequent pricing of future aircraft.

That would be the only way that it would get into future aircraft. Otherwise, we are dealing with primarily a timing issue and a cost which is incurred in that particular period and resolved in that period.

Mr. MCCANDLESS. The original contract was to build a test model, five production models, for $6.2 or $6.5 billion.

Mr. REED. Six point six.

Mr. MCCANDLESS. So we are going to get our five production models and our test model for that amount of money. So in terms of the Federal Government paying more for the six planes, that has yet to take place, if it takes place.

Mr. REED. This is a fixed-price incentive contract. They are over the ceiling on this contract. We will pay no more than $6.6 billion regardless.

Mr. MCCANDLESS. When you say they are over the ceiling, you mean they have spent more money or will spend more money than the $6.6 billion?

Mr. REED. That is correct; that is what I mean.

Mr. MCCANDLESS. One of the things in reviewing all the literature and information that has passed through the committee, it seems that you have written a number of reports which should have alerted the Department of Defense to the problems of the C–17. And I am curious to know how your reports are used. That would be the first part of my question.

The second part of my question is, once completed, what happens to your reports? Who sees them and how are they used?

Mr. REED. Our reports are issued to the corporate administrative contracting officer. He accepted all the recommendations in our reports regarding the monitoring actions that we recommended and

was carrying out an intensified financial surveillance as a result of their own inquiries.

The corporate administrative contracting officer has the responsibility to apprise the program office officials and higher level OSD officials regarding any major aspect of contract administration that might be of concern.

So it would be up to the corporate administrative contracting officer to alert the program officials and others in the department who were in the particular chain to manage the program as to the consequences of our reports and how he is utilizing them.

Mr. MCCANDLESS. My understanding is that there have been some command changes since these problems first surfaced. Were these changes the result of what we are experiencing here, the problem of senior level officers and officials not learning of necessary program or financial information?

Mr. REED. I have no personal knowledge of the basis of any changes from that regard.

Mr. MCCANDLESS. Next week we expect to have Acting Secretary of the Air Force, Michael Donnelly, appearing before the committee. Secretary Donnelly is the former chief financial officer of the Air Force. Given his role in respect to that, do your reports normally go to him?

Mr. REED. No, sir, they do not. They go to the corporate administrative contracting officer. He has the responsibility to report up to the program office, in this case, say, for the C–17, the C–17 program office, regarding any particular contract administration issues that might be affecting that program.

The program office has the responsibility for reporting up its chain of command to its acquisition officials and its financial officials regarding the consequences of these reports.

Mr. MCCANDLESS. Now that we have gone through this, everything that has come forward has had a little tinge to it that the people in charge of the Defense Department who make decisions were not aware of the depth of trouble of not only this program, but other programs until they surfaced in an abnormal way rather than through the chain of command.

Where is the glitch? What is happening? How come the decisionmakers are not receiving your information and that of others who track the various components of these contracts?

Mr. REED. I believe probably the most notable example of this problem has been the A–12, which was thoroughly investigated at the time of the termination as to how this particular phenomenon was occurring.

And I believe the common conclusion that one would get from reading that investigation report is that we are faced with a problem of the program office being an advocate of the program, and choosing to see situations in its most favorable light as opposed to others who look at it coldly without a role of advocacy and perhaps look at the same facts and reach a much more pessimistic conclusion. That has been the most generous conclusion one could reach.

I think also these situations are complicated by the fact that the companies involved are not adequately fulfilling their responsibilities to submit adequately supported estimates at completion. The government in many cases is put in the position of having to inde-

pendently develop such estimates and then use those estimates in administering the contracts in a continuing adversarial type of environment where the company is saying, the loss is only $200 million and not the $600 million that the government is alleging.

So ultimately I would say the responsibility rests with the company to develop, under its contract requirements, proper estimates at completion and they should be held closely to that responsibility.

Mr. MCCANDLESS. You have been very patient, Mr. Chairman.

I have one more quick one. McDonnell Douglas has stated in recent news articles that it expects to make a profit on the C–17 lot 3 production in the third quarter of this year. Given your audits and nearness to this program, how realistic is that projection?

Mr. REED. Based on information that I have seen, I believe that at this point it is reasonable to say that there will be a profit on lot 3.

Mr. MCCANDLESS. Thank you, Mr. Chairman.

Mr. ENGLISH. Thank you very much.

Mrs. Maloney.

Mrs. MALONEY. Thank you very much.

Mr. Reed, in your testimony you stated that, quote, you were "deliberately misled." Who specifically in your opinion misled the Defense Contract Audit Agency regarding the C–17 contract cost reallocations?

Mr. REED. The inspector general report that was referred to by the chairman in his opening remarks indicated that there had been discussions between the company and the Air Force regarding how to move money from the development side of the contract to the production side of the contract—with the allegations as documented in that report, that in fact the company and the Air Force devised an approach to do this.

We were not apprised of those discussions and were unaware that what the company was proposing to do was really a coordinated effort—if one accepts the IG's assumptions at this point—was really a coordinated effort. And, in fact, the Air Force had already accepted the approach at the time that the audit agency was asked to evaluate it.

So what I am saying is that there was not full and open communication with us regarding the risks and the determinations that went into suggesting this approach. The technical advice we received, very clearly in our opinion, said that these costs would transition from one portion of the effort to the other portion of the effort at a specific point in time.

It was only after several months later when the DPRO office and the DCAA said that this doesn't seem to make sense based on the work being performed, that the Air Force SPO office responded that we must have misinterpreted their technical report; that indeed the cost did not transition at a single point in time, but was actually a phased transition.

And so, did they come right out and lie to us directly? No.

Were we allowed to make some wrong assumptions, and were we not fully advised of all the facts that might have affected our audit opinion? Yes.

Mrs. MALONEY. Again, did the IG report specifically mention the names of those involved in the alleged misleading information? And if so, could you give those names?

Mr. REED. I don't recall whether it mentioned any names in this specific, particular case.

Mrs. MALONEY. Likewise, Mr. Reed, you testified that the government will not pay more than $6.6 billion for the C–17 contract. What is your estimate of the total cost to the contractor to complete the contract?

Mr. REED. The latest government estimate at completion is $7.864 billion. That estimate at completion is currently under study and may be revised upwards shortly.

Mrs. MALONEY. But what is your estimate?

Mr. REED. The audit office has recommended to the contracting officer an estimate of $7.775 billion. I would point out that our estimate is an advisory estimate that the ACO considers along with those of the other advisers on his staff in developing the government position he uses for progress payment purposes.

Mrs. MALONEY. So in fact we are over the $6.6 billion that the government will pay.

In your analysis, do you believe that the contractor is financially capable of absorbing this additional loss?

Mr. REED. Yes, I do. The company has already absorbed—has already recognized a loss of $574 million of this amount.

In addition, they have asserted claims exceeding $300 million, of which $208 million they anticipate recovery with enough confidence that they are reflecting it in their financial statements as revenue and not a loss.

The remaining portion that one would—that has not been either recognized in the loss already or recognized as a recoverable claim I think is within the company's capability to absorb.

Mrs. MALONEY. You likewise testified that you advised the corporate administrator of your research and audits.

Why did you not advise the appropriate contract officer in the government? You were advising the corporate contract officer. Is that the private——

Mr. REED. Let me correct that. That is the government corporate administrator.

Mrs. MALONEY. Government corporate administrator.

Thank you very much.

Mr. ENGLISH. Ms. Brown.

Ms. BROWN. Thank you very much.

I have a question. On September 28, McDonnell Douglas made a request for funds. On October 1, 1990, we issued a check for $81.2 million, which at that time was an overpayment of $72 million.

Nothing in my experience since I have been here—I am new to the Congress—or nothing in my 10-year experience prior to coming to the Congress would indicate to me that the government could issue a check that quickly. Can you explain how that overpayment took place?

Mr. REED. I believe you are referring to a progress payment at that point in time. And I think the controversy there was whether or not—what was the estimate at completion at that time, and in-

deed, should there have been a loss ratio applied or not. That was the point of controversy.

As far as the speed of the payment, the government does pay progress payments very promptly as a matter of routine.

Ms. BROWN. You are saying that 3 days to process a check for $81.2 million is common?

Mr. REED. Yes, I am.

Ms. BROWN. Over the contract, you indicated that this one particular contract you have paid 6 point how much billion dollars?

Mr. REED. The contract value for full-scale development, lots 1 and 2, was $6.6 billion—ceiling price.

Ms. BROWN. I understand that they have three contracts at the same time. Can you tell me the total amount of those three contracts? Because one is research, but one is also production.

Mr. REED. The full-scale engineering portion of the contract is $4.9 billion. Lot 1 is 0.8 billion, and lot 2 is 0.987 billion. I approximated the $6.6 billion. According to the actuals, we are talking $6.701 billion.

Ms. BROWN. Did you give them on one contract for production $4 billion up-front money?

Mr. REED. I am sorry. Could I hear your question again, please?

Ms. BROWN. Did you give them for another contract, same plane, some additional moneys for production, close to $4 billion?

Mr. REED. I believe there has been contracts awarded for long lead time funding on lots 4, 5, and 6. I do not have the specifics on that. I would be happy to provide that for the record.

Ms. BROWN. I would like to know that, because—explain to me this lead money.

[The information follows:]

DEFENSE CONTRACT AUDIT AGENCY
CAMERON STATION
ALEXANDRIA, VIRGINIA 22314

27 MAY 1993

OFFICE OF THE DIRECTOR

Honorable John Conyers
Chairman, Subcommittee on Legislation
and National Security
Committee on Government Operations
U.S. House of Representatives
373 Rayburn House Office Building
Washington, D.C. 20515

Dear Mr. Chairman:

On April 22, 1993, I testified before your committee on the audit activities of the Defense Contract Audit Agency regarding the financial condition of McDonnell Douglas Corporation (MDC) during 1990-1991. During the proceedings, I was asked several questions concerning the status of the C-17 program. The following is our response to these questions.

1. Question: Congressman Christopher Shays requested that I review documentation that he had received relative to the performance status of Lot III.

Response: Mr. Shays stated that the documentation shows that MDC has been below the general profit margin on the contract and that MDC was not covering its costs since September of 1992 on Lot III. Mr. Shays' documentation consisted of three charts on the schedule and cost analysis of Lot III and the contractor's contract cost performance report for the period 1-28 February 1993 (see Enclosure 1). The documents contained some government data with handwritten information added. We were unable to trace the handwritten data on the documents to any government source.

We have provided an up-to-date chart of the Lot III Cost Performance Index (CPI) for December 1991 through March 1993 (Enclosure 2). A chart such as this is prepared by the government as a routine part of its surveillance of the contractor's performance on the contract. The chart measures work accomplished against dollars actually spent. The chart shows that the cumulative CPI has declined from $0.95 in September 1992 to $0.91 in March 1993, which indicates a deterioration in the cost efficiency of the work performed on Lot III.

Because of this trend and others which indicate a deterioration in MDC's performance on the contract, the government undertook a bottoms-up review of the estimate at completion (EAC), which was just completed. The EAC is used to compute progress payments to the contractor. If both the contractor's cost and physical progress based on work to date as well as its EAC are within the contract cost and performance schedule, progress payments are

received at the contract prescribed percentage of the actual cost incurred. However, if cost incurred exceeds the contract value of work performed, indicating ultimately a higher estimate at completion than the contract ceiling price, each progress payment is reduced for the pro rata share of the anticipated loss.

Congressman Shays' chart entitled "Lot III Negotiated Incentive Arrangements" included the following handwritten notation: "upcoming DPRO EAC--$1,215." This suggests that the government's EAC would be at the contract ceiling price of $1,215 million in the near future. We were unable to find any documentation to confirm this notation. At the time of the hearing, the government's EAC was $1,119 million. However, the Defense Plant Representative Office at Douglas Aircraft Company, where effort on the C-17 program is being performed, announced on 12 May 1993 a revised EAC of $1,210.9 million.

2. Question: Congresswoman Corrine Brown requested information on long-lead funding on Lots IV, V, and VI.

Response: Long-lead funding is generally authorized to allow for the advance procurement of items or effort necessary to meet projected production schedule dates. Such items or effort normally require an extensive acquisition time cycle, much of which must occur before full production on the program. Long-lead contracting is accomplished by the use of advance procurement funds which have been authorized by Congress.

Long-lead funded contract effort on the C-17 program was considered necessary to protect production schedules. The following represents a schedule of long-lead funding and progress payments on contracts for Lots IV, V, and VI through March 1993:

	($000,000)	
	Long Lead Funding	Amounts Paid
Lot IV	$ 744.8	$278.9
Lot V	247.0	101.6
Lot VI	84.4	8.8
Total	$1,076.2	$389.3

Honorable John Conyers

If you have any questions regarding these matters please contact me at (703) 274-6785. If your staff have any questions please contact Mr. Robert DiMucci, Chief, Policy Liaison Division at (703) 274-7521.

Sincerely,

William H. Reed
Director

Encls 2
1. Congressman Shays' Documents
2. Lot III Cost Performance Index Chart

Mr. REED. It is fairly common on major production programs for the department to contract with the company in advance of full rate production to secure the necessary material that require a considerable advance purchase timeframe in order to be prepared to carry out the regular production phase at the time that the other funding becomes available.

Ms. BROWN. I hope this is the case when the program is working effectively, but what is the case when the program is not working? Is there not a black flag in there?

I mean, I don't understand how we could give them an additional $4 billion for a program that is not working.

So my figures show that we have given them a total of $13 billion. If that is incorrect——

Mr. REED. I can't confirm the $4 billion advance funding amount. I am not sure what that amount is.

The Air Force program officials, who I believe you have as witnesses at your next hearing, I think could best answer your question here as to the decisions and the factors that went into the decisions regarding further contracting.

Mrs. MALONEY. The IG's report did name the generals, and they will be testifying this week.

Mr. ENGLISH. Ms. Brown, are you finished?

Ms. BROWN. No, I am just finished with them.

Mr. ENGLISH. Thank you very much.

We have two members of the committee who are not members of this subcommittee, Mr. Horn and Mr. Shays, but they have joined us today.

Mr. Horn, do you have anything?

Mr. HORN. I have three brief questions, Mr. Chairman.

Mr. McCandless mentioned we did not receive your testimony until this morning. When did you send it over to the committee?

Mr. REED. It was sent yesterday afternoon. I apologize to the committee. I do make an effort to get these statements in on time.

Mr. HORN. No. 2, I have asked this question before of another witness, but was McDonnell Douglas ever reimbursed for 1 penny more than they were entitled to under the C–17 contract?

Mr. REED. I do not believe one can conclude that to be the case with the present facts that we have. There are a lot of allegations presently being explored. Presently I would have to say they have not been.

Mr. HORN. They have not been reimbursed for 1 penny more than they have legitimately spent on this contract?

Mr. REED. That is correct.

Mr. HORN. Let me ask you now just a general question. You have had a lot of experience with a lot of defense contracts, and I note in looking at this, the C–17 wasn't the only project that was in question here.

Are the problems of cost overruns or schedule slippages unique to the C–17 program and McDonnell Douglas, or does this occur on other major defense contracts, to your knowledge?

Mr. REED. It does occur on other major defense contracts.

Mr. HORN. And it is regrettable—I am sure you are frustrated, the contractor is frustrated, the public is frustrated, the congres-

sional committees are frustrated. Unfortunately, we have problems on estimating costs on huge contracts.

Mr. REED. I think the problems in the acquisition system in this area are well documented, and I agree, I share your frustration.

Mr. HORN. So what I gather from what I have heard in the last few minutes from your response to these questions and to questions from other members of the committee, you said McDonnell Douglas is financially capable of absorbing the loss that is its responsibility on this contract.

Mr. REED. Yes.

Mr. HORN. And that not 1 dime more has been given to McDonnell Douglas by the taxpayers of this country that was not legitimate under the contract?

Mr. REED. Based on the facts known at this time.

Mr. HORN. Thank you very much.

Mr. ENGLISH. One point I would like to make on that, Mr. Reed, if I could follow up on that, Mr. Horn.

Were they paid at a time that they shouldn't have been paid?

Mr. REED. I think there is a valid concern that the timing of the payments may be affected by some of the matters that we were discussing earlier.

Mr. ENGLISH. And were they paid more than they should have been paid at those times?

Mr. REED. Yes.

Mr. ENGLISH. There is no question with regard to those. I don't think the issue has ever been raised about McDonnell Douglas billing the government for more than what they have spent. The real question is the contract, is it not?

Mr. REED. That is correct. I think the two issues that I would point to would be, what is the accurate estimate at completion to be applied in computing the loss ratio, and when was that number known, and when should it have been applied.

Mr. ENGLISH. That is exactly right.

Mr. REED. And the other one of course is the journal entry matter we were talking about earlier.

Ultimately, I believe it is going to turn out that there were some payments advanced ahead of schedule as a result of that transaction.

Mr. ENGLISH. And misinformation—that misled your agency—provided?

Mr. REED. That is correct.

Mr. ENGLISH. Thank you.

Mr. Shays.

Mr. SHAYS. Thank you, Mr. Reed.

I am not a member of this subcommittee this year, but I was last year and the year before, and remember well the hearing. It was almost as if the members of this committee were the enemy because we were asking questions about cost overruns, and we were being assured by the company and everyone else that everything was fine.

So my problem is a general feeling that there was a coverup and a conspiracy taking place between the company and the government.

And my question to you centers around the whole issue of your willingness right now to say that lot 3, they are going to do just fine, when I am looking at documentation that tells me from September on they are not covering their costs.

I want to know what documentation you are using that makes you feel comfortable that the company is going to do fine with lot 3?

Mr. REED. The cost incurred as of 1993 is $895 million for lot 3. The estimate to complete is $1.1 billion. If those estimates are accurate, the company will make a profit on lot 3.

Mr. SHAYS. Whose estimates are those?

Mr. REED. These are the estimates that the government is currently—well, the costs incurred are the actual costs incurred. The estimate to complete is the estimate to complete that the government has validated and is using currently.

Mr. SHAYS. When you say the government, I have gotten to the point where there are a lot of different government agencies involved. Some government agencies I trust and some I don't.

What government agency is telling us that these figures are valid?

Mr. REED. The defense contract management command is the organization which is responsible for managing the contract administration aspects of this particular contract.

Their contracting officer in the defense plant office is the organization that is responsible for deciding what is the proper estimate at completion for administering progress payments.

Mr. SHAYS. I am looking at documentation that said since September of last year they have been below a general profit margin, they are not covering their costs, and that the trend line is going down, not up. What has happened since September?

Mr. REED. Are you referring, sir, to the overall profit line?

Mr. SHAYS. CPI trends, lot 3 on the C–17.

Mr. REED. I am afraid I can't shed any light on that.

Mr. SHAYS. Do you have the documentation we can show him?

Mr. ENGLISH. I wonder if we couldn't take this up with some written questions to the gentleman.

Mr. SHAYS. I would be happy to do that. I know the chairman is ready to come, but, you know, the one point that Mr. Reed is making is discomforting to me. He is basically saying they are going to do fine with lot 3 and we have documentation that says they won't. I will leave it at that if you want.

Mr. MCCANDLESS. Mr. Chairman, if I may, we have the documentation Mr. Shay is looking at. We will provide Mr. Reed with this and possibly Mr. Reed can either respond in writing or at our next hearing we can analyze this.

Mr. REED. I would be most happy to. I am very anxious to see it.

Mr. ENGLISH. That might be the most appropriate way to handle it.

Mr. Reed, we want to thank you very much for your testimony. We appreciate it.

Our next witness—and really it is a panel, I should say—is Mr. John McDonnell, who is the chairman and chief executive of McDonnell Douglas, and Mr. Herbert Lanese, the senior vice presi-

dent of finance, will also accompany Mr. McDonnell. I also understand Mr. David Swain, the aerospace division's vice president for transport aircraft, will also accompany you.

If each of you three gentlemen would rise, my understanding is you are prepared to take the oath.

[Witnesses sworn.]

Mr. ENGLISH. Please be seated.

Mr. McDonnell, we will let you proceed, if you would. You have a joint statement for all three of you, or do each of you have separate statements?

Mr. MCDONNELL. One joint statement.

Mr. ENGLISH. If you would care to summarize that statement, without objection, the complete written testimony will be made a part of the record.

STATEMENT OF JOHN F. McDONNELL, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, McDONNELL DOUGLAS CORP., ACCOMPANIED BY HERBERT J. LANESE, EXECUTIVE VICE PRESIDENT AND CHIEF FINANCIAL OFFICER; AND DAVID O. SWAIN, SENIOR VICE PRESIDENT FOR TRANSPORT AIRCRAFT, McDONNELL DOUGLAS AEROSPACE

Mr. MCDONNELL. Good. I will do that. Thank you.

And I would like to say on behalf of the 78,000 employees of McDonnell Douglas Corp., I am pleased to have this opportunity to speak to you about the C–17 program, one of a large number of products developed and built by McDonnell Douglas in support of our national defense and our Nation's commercial transportation industry.

Over the past 70 years, McDonnell Douglas has produced over 50,000 military and civilian aircraft for the United States and our allies. This work has provided hundreds of thousands of Americans with quality jobs while contributing significantly to the security and economy of the Nation.

For the past 6 years, we have been the Nation's largest defense contractor and the third largest contractor for NASA. We are also the second largest research and development contractor for the Government of the United States.

McDonnell Douglas is the 23d largest U.S. industrial corporation. We are the Nation's seventh largest exporter and the world's leading builder of military aircraft and the third largest builder of commercial aircraft.

Our company is extremely proud of its accomplishments as a leader in the aerospace industry and for our contributions to the nation's defense.

Most recently, the company's aircraft played a major role in Desert Storm, where every single enemy aircraft shot down in air-to-air combat was destroyed by a McDonnell Douglas aircraft. The company's combat aircraft, the F–15 Eagle, the FA–18 Hornet, the AV–8B Harrier, vertical takeoff and landing aircraft, and the Apache helicopter were operated by all four of our military services during the war.

Simply put, we build the best aircraft in the world. We have the leadership, management strength, and a solid, dedicated team who

will continue to build the highest quality systems. In truth, we are a strong company with a proud heritage and a bright future.

As for the C–17 program, we have committed strong executive leadership at the program level at Long Beach, CA. The C–17 receives the highest attention by senior management, and we have continuously supported the program financially. The C–17 is the right product, and now is the time to bring it into our Nation's airlift fleet.

We have addressed the problems associated with the development of the C–17 and we have worked closely with our Air Force customers to resolve difficult issues. We have responded to the concerns of the Congress, and as a matter of fact McDonnell Douglas has appeared before Congress numerous times to present information concerning our many programs.

Currently, the aircraft is proving itself during ongoing flight tests. The C–17 has been flying for more than 1½ years. Six aircraft have already logged more than 1,200 flight hours on more than 320 missions during that test phase.

The pilots and air crews who have flown the C–17 applaud it as a superb aircraft. On routine test missions, we have set 14 world records for payload altitude. We have flown more than 160,000 pounds of U.S. Marine Corps equipment from California to Florida and back over routes of more than 2,400 nautical miles. These are truly successful demonstrations of the C–17's operational utility.

As for the inspector general's allegations, McDonnell Douglas was performing its work in accordance with its contract with the Air Force. We sought to be paid for the work we had performed.

When the Air Force was not meeting its obligations to pay, McDonnell Douglas financed the work for a period of time and advised the Air Force that it could not continue to do so indefinitely. Nevertheless, we at all times continued working on the program, even though these payment issues, even to this day, have never been resolved to our satisfaction.

Have there been problems associated with the C–17 development? Yes. There are problems in all development programs.

For the C–17, the problems have been identified and resolved, or are in the process of being resolved.

As a corporation, McDonnell Douglas is committed to the C–17 program, and is fully able to complete it. We will continue working closely with the Air Force to ensure that the aircraft they need—that they get the aircraft they need at a good value and one which proudly bears the name of McDonnell Douglas.

Joining me today are Mr. Herb Lanese, executive vice president and chief financial officer for McDonnell Douglas, and Mr. Dave Swain, senior vice president for transport aircraft.

I regret that due to my misunderstanding I did not appear at your hearing last month. We welcome this opportunity to respond to the committee's questions.

[The prepared statement of Mr. McDonnell follows:]

Statement of John F. McDonnell
Chairman and Chief Executive Officer
McDonnell Douglas Corporation

House Committee on Government Operations
April 22, 1993

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE, ON BEHALF OF THE 78,000 EMPLOYEES OF MCDONNELL DOUGLAS CORPORATION, I AM PLEASED TO HAVE THIS OPPORTUNITY TO SPEAK TO YOU ABOUT THE C-17 PROGRAM -- ONE OF A LARGE NUMBER OF PRODUCTS DEVELOPED AND BUILT BY MCDONNELL DOUGLAS IN SUPPORT OF OUR NATIONAL DEFENSE AND OUR NATION'S COMMERCIAL TRANSPORTATION INDUSTRY.

OVER THE PAST 70 YEARS, MCDONNELL DOUGLAS HAS BUILT OVER 50,000 MILITARY AND CIVILIAN AIRCRAFT FOR THE UNITED STATES AND OUR ALLIES. THIS WORK HAS PROVIDED HUNDREDS OF THOUSANDS OF AMERICANS WITH QUALITY JOBS WHILE CONTRIBUTING SIGNIFICANTLY TO THE SECURITY AND ECONOMY OF THE NATION.

MOST RECENTLY MCDONNELL DOUGLAS AIRCRAFT PLAYED A MAJOR ROLE IN DESERT STORM WHERE EVERY SINGLE ENEMY AIRCRAFT SHOT DOWN IN AIR-TO-AIR COMBAT WAS SHOT DOWN BY A MCDONNELL DOUGLAS AIRCRAFT. MCDONNELL DOUGLAS AIRCRAFT WERE FLOWN BY ALL FOUR OF OUR MILITARY SERVICES DURING THE WAR. THE AIR FORCE OPERATED THE F-15 EAGLE; THE NAVY AND MARINES OPERATED THE F/A-18 HORNET FROM THE DECKS OF OUR AIRCRAFT CARRIERS AND FROM AIRFIELDS ASHORE; THE MARINES FLEW THE AV-8B SHORT TAKE-OFF VERTICAL LANDING AIRCRAFT FROM AMPHIBIOUS SHIPS AND AIRFIELDS ASHORE; THE ARMY DEPLOYED THE SOPHISTICATED AH-64 APACHE ATTACK HELICOPTER THROUGHOUT THE CONFLICT.

MCDONNELL DOUGLAS IS EXTREMELY PROUD OF ITS ACCOMPLISHMENTS AS A LEADER IN THE AEROSPACE INDUSTRY AND ITS CONTRIBUTIONS TO OUR NATION'S DEFENSE.

WE ARE A STRONG COMPANY WITH A PROUD HERITAGE AND A BRIGHT FUTURE.

FOR THE PAST SIX YEARS WE HAVE BEEN THE NATION'S LARGEST DEFENSE CONTRACTOR. WE ARE THE SECOND LARGEST RESEARCH AND DEVELOPMENT CONTRACTOR OF THE UNITED STATES GOVERNMENT AND THE THIRD LARGEST CONTRACTOR FOR NASA. MCDONNELL DOUGLAS IS THE 23RD LARGEST U.S. INDUSTRIAL COMPANY. WE ARE THE NATION'S SEVENTH LARGEST EXPORTER; THE WORLD'S LEADING BUILDER OF MILITARY AIRCRAFT, AND THE THIRD LARGEST BUILDER OF COMMERCIAL AIRLINERS.

MR. CHAIRMAN, SIMPLY PUT, WE BUILD THE BEST AIRCRAFT IN THE WORLD! WE HAVE THE LEADERSHIP AND MANAGEMENT STRENGTH; PLUS A SOLID, DEDICATED TEAM WHO WILL CONTINUE TO BUILD THE HIGHEST QUALITY SYSTEMS.

AS FOR THE C-17 PROGRAM, WE HAVE COMMITTED STRONG EXECUTIVE LEADERSHIP AT THE PROGRAM LEVEL IN LONG BEACH, CALIFORNIA. THE C-17 RECEIVES THE HIGHEST LEVEL OF ATTENTION BY SENIOR MANAGEMENT AT MCDONNELL DOUGLAS AND WE HAVE CONTINUOUSLY SUPPORTED THE PROGRAM FINANCIALLY.

THE C-17 IS THE RIGHT PRODUCT AND NOW IS THE TIME TO BRING IT INTO OUR NATION'S AIRLIFT FLEET. WE HAVE ADDRESSED THE PROBLEMS ASSOCIATED WITH THE DEVELOPMENT OF THE C-17 DIRECTLY. WE HAVE WORKED CLOSELY WITH OUR CUSTOMER TO RESOLVE DIFFICULT ISSUES. WE HAVE RESPONDED TO THE CONCERNS OF THE CONGRESS, AS WE HAVE ATTEMPTED TO DO WITH ALL OF OUR PROGRAMS. AS A MATTER OF FACT, MCDONNELL

DOUGLAS HAS APPEARED BEFORE CONGRESS NUMEROUS TIMES TO PRESENT INFORMATION CONCERNING OUR MANY PROGRAMS.

WITHOUT HESITATION, I WOULD LIKE TO REAFFIRM OUR COMMITMENT TO PROVIDING A QUALITY AIRCRAFT TO MEET OUR CUSTOMER'S DEMANDING AIRLIFT MISSION, AND THE C-17 WILL MEET THE CUSTOMER'S OPERATIONAL REQUIREMENTS FAR BETTER THAN ANY OTHER AIRPLANE AVAILABLE.

THE AIRCRAFT IS PROVING ITSELF DURING ONGOING FLIGHT TESTS. THE C-17 HAS BEEN FLYING FOR MORE THAN A YEAR AND A HALF. SIX AIRCRAFT HAVE ALREADY LOGGED MORE THAN 1200 FLIGHT HOURS ON MORE THAN 320 MISSIONS DURING THE TEST PHASE. THE PILOTS AND AIRCREWS WHO HAVE FLOWN THE C-17 APPLAUD IT AS A SUPERB AIRCRAFT! ON ROUTINE TEST MISSIONS, WE HAVE SET 14 WORLD RECORDS FOR PAYLOAD TO ALTITUDE. ON OTHERS, WE HAVE FLOWN MORE THAN 160,000 POUNDS OF U.S. MARINE CORPS EQUIPMENT FROM CALIFORNIA TO FLORIDA AND BACK OVER ROUTES OF MORE THAN 2,400 NAUTICAL MILES -- A SUCCESSFUL DEMONSTRATION OF THE C-17'S OPERATIONAL UTILITY.

AS FOR THE INSPECTOR GENERAL'S ALLEGATIONS, MCDONNELL DOUGLAS WAS PERFORMING ITS WORK IN ACCORDANCE WITH THE CONTRACT WITH THE AIR FORCE. WE SOUGHT TO BE PAID IN ACCORDANCE WITH THE CONTRACT FOR THE WORK WE HAD PERFORMED. WHEN THE AIR FORCE WAS NOT MEETING ITS OBLIGATIONS TO PAY, MCDONNELL DOUGLAS FINANCED THE WORK FOR A PERIOD OF TIME AND ADVISED THE AIR FORCE THAT IT COULD NOT CONTINUE TO DO SO INDEFINITELY. NEVERTHELESS, WE AT ALL TIMES CONTINUED WORKING ON THE

PROGRAM EVEN THOUGH THESE PAYMENT ISSUES HAVE NEVER BEEN RESOLVED TO OUR SATISFACTION.

YES, THERE HAVE BEEN PROBLEMS ASSOCIATED WITH THE C-17 DEVELOPMENT, AS THERE ARE IN ALL DEVELOPMENT PROGRAMS. THOSE PROBLEMS HAVE BEEN IDENTIFIED, AND RESOLVED, OR ARE IN THE PROCESS OF BEING RESOLVED.

I NEED TO REEMPHASIZE THAT WE, AS A CORPORATION ARE COMMITTED TO THE C-17 PROGRAM. WE ARE ALSO FULLY ABLE TO COMPLETE THE C-17 PROGRAM; AND WE ARE WORKING CLOSELY WITH THE AIR FORCE TO ENSURE THEY GET THE AIRCRAFT THEY NEED, AT A GOOD VALUE; AND ONE WHICH PROUDLY BEARS THE MCDONNELL DOUGLAS NAME.

JOINING ME TODAY IS MR. HERB LANESE THE CHIEF FINANCIAL OFFICER FOR MCDONNELL DOUGLAS AND MR. DAVE SWAIN, SENIOR VICE PRESIDENT FOR TRANSPORT AIRCRAFT.

WE WELCOME THIS OPPORTUNITY TO RESPOND TO THE COMMITTEE'S QUESTIONS.

Mr. ENGLISH. Thank you very much.

Do either of the other two gentlemen care to make any statement?

Thank you very much.

Mr. McDonnell, the purpose of being here today, of course, as I am sure you are aware, is to discover the source of the motivation for the Air Force funds moved improperly to your company.

There is testimony regarding certain meetings at which you were present. And you were the only person, you are the only person who is testifying as to what took place in those meetings, certainly on your behalf.

While you were not here for the inspector general's testimony that took place on March 17, I assume that you are familiar with the findings of the inspector general regarding the last half of 1990 as it affects the C–17.

Would you tell us as completely as possible the events that took place, including the meetings and conversations with government officials that led up to the October 2, 1990, meeting here in Washington?

Mr. McDONNELL. During the several months I would say starting in late August, I had a series of meetings with various officials of the U.S. Air Force and the Department of Defense. In none of those meetings was there any sort of secret agreement, was there any sort—in fact, in none of those meetings did I get any assurances from any of those individuals as to what progress payments would be paid to us.

I was—in having that series of meetings—I felt it was my obligation as the chief executive officer of McDonnell Douglas to talk with the highest officials of our customer, namely the U.S. Government, to try to get straightened out the fact that the U.S. Government was hundreds of millions of dollars behind in progress payments on several of our programs, the chief one being the C–17 program.

So through a series of meetings, I was trying to get them to understand it was a major issue; and second of all, to try to get resolution of the issues for which they were withholding progress payments.

Mr. ENGLISH. And who was the highest-level government official that you contacted directly or indirectly in any way concerning these fundings, the funding for the defense programs?

Mr. McDONNELL. The highest level official was Mr. Atwood, Deputy Secretary of Defense.

Mr. ENGLISH. There was no contact made with the White House?

Mr. McDONNELL. No.

Mr. ENGLISH. Did you use any lobbyist to approach any government officials, and if so, who did they contact on your behalf?

Mr. McDONNELL. I do not have any memory of that. I am not aware.

Mr. ENGLISH. You do have representatives here in Washington government contacts, so-called government lobbyist, do you not?

Mr. McDONNELL. We do have representatives here in Washington.

Mr. ENGLISH. And I would assume they did have some contact with government officials with regard to these matters?

Mr. MCDONNELL. I am sure they did, yes.

Mr. ENGLISH. Would you supply that and give us that information for the record?

Mr. MCDONNELL. Fine. I believe we would be able to do that.

[The information follows:]

No lobbyist was employed by McDonnell Douglas to contact the White House concerning the progress payment issues being addressed with senior officials of the Department of Defense in the summer and fall of 1990; and, based on a review of available records, no other McDonnell Douglas representative made such a contact.

Mr. ENGLISH. You met with Assistant Secretary of the Air Force Jack Welch, on September 13, 1990. Could you tell us what transpired at that meeting?

Mr. MCDONNELL. I had a series of meetings with Mr. Welch. I do not have a specific memory of a particular meeting, but I can tell you that in the course of those meetings I was trying to get him to understand that there was a major payment issue, that we believed that the U.S. Government was in breach of contract, and to try to get the U.S. Air Force focused on the fact that there was a major problem that needed to be resolved.

Mr. ENGLISH. So there were several meetings that took place during this period with Mr. Welch; is that right?

Mr. MCDONNELL. Yes.

Mr. ENGLISH. And you don't remember this specific meeting on September 13, 1990?

Mr. MCDONNELL. I do not have a specific memory of what happened at that meeting versus other meetings. I do have——

Mr. ENGLISH. Could you give us to the best of your ability what took place at the series of meetings, then, during that period? Could you enlighten us a bit there and give us as much detail as you possibly can?

Mr. MCDONNELL. As I indicated, in that series of meetings I made Mr. Welch fully aware that relative to the C–17 program, that we believed we were due several hundred millions of dollars of additional progress payments. In fact, that was being built up at the rate of well over $100 million a month, because for several months we had been paid nothing by the U.S. Air Force, and we were incurring additional costs at the rate of well over $100 million a month.

So in that series of meetings, I was reviewing with him those issues, and talking about what could be done, how do they break the logjam, how do they pay us closer to what they owe us, and that was what transpired over the course of those meetings.

Mr. ENGLISH. And what was Mr. Welch's response?

Mr. MCDONNELL. Over the course of the meetings, he basically agreed to look into the matter carefully, to get a process started to determine what could be paid to us, and then basically saw that process through that culminated in the October 2 meeting. In other words, he had appointed a whole team to look into this matter.

Mr. ENGLISH. Did Mr. Welch in any way contest the fact that you were owed money, that McDonnell Douglas was owed money?

Mr. MCDONNELL. In my meetings with him he did not directly contest the fact. He was basically gathering facts, trying to understand the situation, and appointed a team to determine what the facts were and determine what should be done by the Air Force.

Mr. ENGLISH. Did he agree that the Air Force owed money to McDonnell Douglas?

Mr. MCDONNELL. Our discussions really weren't in those—along those lines as such. I do not have a memory of his having agreed or disagreed as to specifically what the U.S. Air Force owed McDonnell Douglas.

Mr. ENGLISH. I guess that seems a bit strange to me. Someone comes to me and says, you owe me money. My first response would be, try to determine, do I owe you money or do I not. I assume you laid it on the line: Here is the reason we feel you owe us money.

Mr. MCDONNELL. Yes.

Mr. ENGLISH. And he did not in any way contest that?

Mr. MCDONNELL. What he did was to form the team to set up a process for determining what it was that they owed us, and on what basis they could pay us.

Mr. ENGLISH. But is it not also the case that under these contracts—and these are very precise contracts, are they not, which your company would enter into with the Federal Government to build an aircraft of this sort? That is very precise and very specific as to what is to be done when, is it not?

Mr. MCDONNELL. It is very complex. There are many provisions and regulations, and trying to determine exactly what is due under each of those provisions and regulations is very complex.

Mr. ENGLISH. And it says specifically when it is to be paid, does it not?

Mr. MCDONNELL. It sets up a procedure as to when it is to be paid. In this case, there were several issues that he was having to look into to determine.

Mr. ENGLISH. I guess I am having a little trouble, Mr. McDonnell, understanding that. We have very specific contracts. At certain points McDonnell Douglas is to receive payment for certain acts. So once you hit those points, the government makes payment.

Now, unless the government has failed to make a payment at that point—and it would appear to me that would be very easy to determine—then I am having trouble understanding how under this kind of a contract, you can simply go to the Department of Defense, to an official there, to in fact the Assistant Secretary of the Air Force and say, hey, you owe us money, and, you know, of X amount of dollars. And he is going to sit around and say, well, golly gee, we will try and put a team together to figure out if that is the case.

It would appear to me under the circumstances he would know precisely whether or not you had been paid under the terms of the contract at the time the contract called for you to be reimbursed.

So I don't understand this murky thing of, golly gee, I don't know whether I owe you any money or not; we will put together a team and examine it. This is a very precise legal contract that you have.

You have got an awful lot of lawyers and accountants and auditors that are following this thing day by day, plus you have got people from the Air Force onsite to know exactly when you have or have not completed a particular stage; is that not correct?

Mr. MCDONNELL. This is a very complex contract. There are two major issues that the Air Force was trying to determine whether they believe they owed us money relative to those issues.

We felt very strongly—in fact, we felt we had very strong legal grounds relative to those issues that they owed us. But it is a very complex contract with a lot of different clauses in it. And as I say, we believe they definitely owed us the money. But they are complex contracts, and he was trying to determine the—upper levels were trying to determine what the situation really was.

Mr. ENGLISH. Isn't it a bit more complicated than that, Mr. McDonnell? It was my understanding that the contracting officer in fact cut off payments, is that right?

Mr. MCDONNELL. The contracting officer stopped paying us. And there were two major issues. One was R&D money versus production money, and the other was the contracting officer saying that we did not have a valid estimate at completion. We believe the contract was clear on both of those points and that the money was owed us.

Mr. ENGLISH. But to pinpoint precisely what happened, is it not correct that what you had was an official at the Department of Defense whose responsibility was to give approval, the contracting officer, to give approval as to whether or not the terms of the contract were being met, and determined that they were not being met, and therefore cut off the government payments? Is that not true?

Mr. MCDONNELL. And we believe they were wrong.

Mr. ENGLISH. I understand there was a difference of opinion with regard to this.

So when you came to see Mr. Welch, it wasn't just simply an affair of, golly, here is a list of, you know, so many millions of dollars we think you owe us and why. What really was an issue was that the contracting officer had made the determination that in fact McDonnell Douglas had not lived up to the terms of the contract, and therefore the government cut off money.

Mr. MCDONNELL. I think that is far oversimplified. These issues are ones that we believed we had a very strong case, but out of a superabundance of caution, the contracting officers in the government were taking the position, well, we are not sure, and so therefore we are not going to pay you.

Mr. ENGLISH. It sounded like he was darn sure, if he cut off your money.

Mr. MCDONNELL. Certainly that was the impact on us. It was an impact we could not stand.

Mr. ENGLISH. I am sure the contracting officer does not do such things lightly, does he? He just doesn't say, golly gee, let's cut off their money today.

This is a very important project, very important to the Air Force, and very important to this Nation, as well as—I would hope that we have responsible people who are contracting officers; it is my understanding that they are, people who have dealt with these contracts year in and year out. And he had come to this conclusion.

I am really having trouble believing that he would do so very lightly. It appears to me in order for him to reach that point, he would have to have a serious conviction that in fact the contract was not being lived up to.

Mr. MCDONNELL. I cannot speak for the contracting officers or for the others, but we believed we had very strong legal grounds

that cutting off the payment was not an appropriate action, and it was an arbitrary action.

Mr. ENGLISH. You have had a number of other Department of Defense contracts, have you not, at McDonnell Douglas over the years?

Mr. MCDONNELL. Yes.

Mr. ENGLISH. How common is it to have a contracting officer cut off payments?

Mr. MCDONNELL. It is fairly common.

Mr. ENGLISH. For what period of time?

Mr. MCDONNELL. I mean, there is no normal period of time.

Mr. ENGLISH. Have you had it happen, for instance, with the F–18?

Mr. MCDONNELL. Mr. Lanese.

Mr. LANESE. I am sure we have, Congressman, on numerous occasions. It is very common for that to happen.

Mr. ENGLISH. So it was no big deal for the contracting officer to cut off payments; is that right?

Mr. LANESE. It is not so much whether it was a big deal or not, Congressman. The fact was this was such a large amount of money and it was for such an extended period of time that it caused us great concern.

And again, if I may, the issues that—there were two issues that we had a dispute on, and it was a complex issue. And the contracting officer, I would assume, took the easy route. The easy route was to not pay us until that was resolved. That unfortunately caused us a great deal of financial harm, and that continued, and that is where the event really arose.

Mr. ENGLISH. Well, I can appreciate that, that you may have disagreements, and as I say, I think it would be interesting for us to take a look at how often this happens.

You tell me, though, that the real problem of this, what made this one unusual, what brought this one to the point that Mr. McDonnell felt like he had to go see the Assistant Secretary of the Air Force, which I assume you normally don't do, then, if you have these kinds of disagreements, is the sum of money that was involved; is that correct?

Mr. MCDONNELL. The sum of money and the duration.

Mr. ENGLISH. And the duration, for what period?

Mr. MCDONNELL. They had stopped payments in July 1990, as I remember, and as of September we had received no additional payments.

Mr. ENGLISH. So it really was the amount of money that was involved and the duration for this conflict that brought this to the point that you had to go see the Assistant Secretary of the Air Force to deal with it, and that is what made it unique?

Mr. MCDONNELL. Yes.

Mr. ENGLISH. It was unique?

Mr. LANESE. Sir, may I add a comment?

Mr. ENGLISH. Sure.

Mr. LANESE. Thank you.

In my mind, sir, it is not unusual for disputes of fact to be brought forward in an organization. That happens in ours all the time. I have many people who work for me who don't agree on sub-

jects. That is brought forward to a higher level in the organization. It is appealed. And the purpose of that appeal process is to get a satisfactory resolution of issues that reasonable people can dispute or have lack of agreement on.

I viewed this as that kind of a process. In our mind, the contracting officer was both capricious and arbitrary in refusing to pay us. We believed that was a violation of the law. And we believe we had a right to stop work on that contract. That severely jeopardized that contract, both for the government and for McDonnell Douglas.

In our mind, that was a serious breach of the government's obligation. We discussed that at the lower levels of the organization and could not resolve it satisfactorily. So from our standpoint, it made a lot of sense to appeal that to higher authorities and make our arguments.

It was our intent to fully pursue that matter to the legal extent we could to get payment back because we felt the program was jeopardized, and if it continued it would jeopardize McDonnell Douglas as well, because the amount of money we were spending at the time was around $150 million a month.

Mr. ENGLISH. So, in effect, what you are telling me is that we have an irresponsible contracting officer who over a minor detail had cut off huge amounts of money to McDonnell Douglas to the point that it would jeopardize the company, not only the company but jeopardize this aircraft so needed by the Nation. Is that correct?

Mr. LANESE. Sir, may I respond in my words to that, please?

Mr. ENGLISH. Please. I am just trying to summarize and get the point. Let me get down to what bothers me about this business.

The thing that really troubles me about this is that, you know, I don't believe Mr. McDonnell gets on the phone and argues over the finding of some small contracting officer over a technicality. I certainly don't think he gets ahold of one of the highest officials we have in the Air Force to make his case. So this does not seem to me to be some ordinary cutoff or dispute with the contracting officer.

By the same token, and maybe I am wrong, maybe the Air Force does have a lot of irresponsible people who are contracting officers, but it appears to me we have a contracting officer who felt this was a serious enough matter that he was willing to take an action, and I am sure he knew the implications of the action that he took, that he felt like it was serious enough that he had to cut off those funds.

He knew the impact that it was going to have on McDonnell Douglas and he knew the impact it was going to have with regard to this program and he knew what questions it raised, which, by the way, certainly are not what the Air Force wanted. They wanted this airplane and they needed it. And I believe they do need it. There is no question in my mind.

The problem comes down with regard to the issue of whether or not the taxpayers are the ones that get shortchanged in this entire effort. And quite frankly, you know, that is what really troubles me about this matter.

And whenever we start—and we will get into the questions about subsequent events that made this thing even more unusual, so this was a unique situation. This was not something that was—that or-

dinarily happens with every program that comes down the road, and I am sure you take that into account. You recognize when that is going to happen. But that is not what happened here.

Mr. MCDONNELL. This was unusual because of the size of it. That is why I got involved. This type of thing does happen very often in terms of progress payments being withheld for this reason or for that reason. Sometimes we believe it is appropriate under a contract. Sometimes we don't believe so. But normally it does not rise to my level and we do not take it to the upper levels of the Air Force because it is not of a magnitude, and it finally gets resolved at the working level.

This is one that had gone on for several months, large amounts of money. If continued, it could be in a position to jeopardize our corporation. And I felt I had to get into it.

Mr. ENGLISH. I would like to take issue with you just a little bit. I believe you just testified this took place, the cutoff took place in July. So we are talking about a time period of 2 months or less.

Mr. MCDONNELL. It was about 2½ months, it was 2 months or so, and at the rate of $150 million a month we were expending. So we were by mid September several hundred million dollars behind.

And projecting out, if it went on to the end of the year, we were going to be close to $1 billion behind in terms of payments made to us in this program. That is a large amount of money for our corporation.

Mr. ENGLISH. It is a large amount of money for taxpayers, too.

The point I guess that we would come down to, then, is that over a 2-month period of time, you still had not been able to resolve this conflict with the contracting officer. The contracting officer had not—his concern had not been dealt with.

So you took it to the Assistant Secretary of the Air Force, Mr. Welch, and then we finally end up with this thing, with a meeting, as I understand it, with Under Secretary of Defense, Mr. Petty, is that right?

Mr. MCDONNELL. At one point I talked with Mr. Atwood. He was the highest official I talked to.

Mr. ENGLISH. What about Mr. Betti?

Mr. MCDONNELL. Mr. Betti was in on at least one meeting and it may have been two meetings that I had with Mr. Betti.

Mr. ENGLISH. The meeting with Mr. Betti, did he recommend the use of Public Law 85–804, the so-called bailout law?

Mr. MCDONNELL. Not that I remember.

Mr. ENGLISH. You don't have any recollection of Mr. Betti making that kind of recommendation to you?

Mr. MCDONNELL. No, I do not, not relative to the C–17.

Mr. ENGLISH. You then met with Air Force officials in St. Louis, I believe, on or about September 28. Could you tell us what transpired in that meeting?

Mr. MCDONNELL. I don't have a recollection of that one in St. Louis.

Mr. ENGLISH. You don't remember a meeting in St. Louis with Air Force officials about that time?

Mr. MCDONNELL. I don't have any recollection of any meeting outside of Washington.

Mr. ENGLISH. Did you at any time inform Air Force officials along about that time that you would shut down the C–17 program if payments weren't resumed?

Mr. MCDONNELL. I indicated to Air Force officials that we could not go on indefinitely financing and funding this program, and that at some point if in fact we were not getting paid as we legitimately deserved to be paid, we would have to stop work on the program. We could not go on indefinitely.

Mr. CONYERS [presiding]. First of all, I would like to thank Mr. Glenn English for chairing in my absence. He has done an admirable job. Maybe too good a job for your chairman, but I suppose I can live under this great light that you shine. Thank you very much. I will yield to you further.

Mr. ENGLISH. Thank you very much, Mr. Chairman. I certainly couldn't fill the chairman's shoes but I struggled along as best I could.

In following up, I just want to complete that, Mr. McDonnell. Again, I am having trouble. This is a very important time for McDonnell Douglas. Here we have within 2 month's—we have funds cut off because of the fact that the contracting officer did not feel that the contract was being adhered to. This has gone on for 2 months now.

You felt it was so important you had to come to Washington. And you had to meet with the Assistant Secretary of the Air Force. And then subsequently you had meetings with Assistant Secretary of Defense, Mr. Betti.

We have had recommendations being made of the so-called bailout law. You had meetings with the Air Force officials.

I am having a very difficult time believing—maybe that is the wrong word—understanding how you could not recall those events that are so critical to the life of McDonnell Douglas. I would think that those would be meetings that would be imprinted on your mind as to who said what, when, where. And certainly somebody coming in and recommending, let's use the bailout law, that is how we are going to solve this problem, we are get around it by using the bailout law.

And that is what I have a very difficult time, quite frankly, believing, that you don't remember those meetings, Mr. McDonnell.

Mr. MCDONNELL. I remember very clearly the whole series of meetings. You recall, this happened more than 2½ years ago. There is a whole set of meetings with a number of different people.

I remember well the thrust of the meetings and what we were trying to accomplish and what we did and did not accomplish. But I don't remember the specifics, 2½ years ago, of what happened at individual meetings. And I do not recall relative to the C–17 the issue of 85–804 coming up.

Mr. CONYERS. Thank you very much.

The Chair would like now to turn to the ranking member of the subcommittee, Mr. Al McCandless.

Mr. MCCANDLESS. Thank you, Mr. Chairman.

Mr. McDonnell, we have had made available to you an inspector general's report, that is my understanding, is that correct?

Mr. MCDONNELL. Yes.

Mr. MCCANDLESS. And you had an opportunity to review that.

It is further my understanding that you are planning to—and if my information is correct, have completed a response to the inspector general's report; is that correct?

Mr. McDONNELL. Yes. We have responded to the Air Force at their request as part of their overall review and investigation.

Mr. McCANDLESS. I would ask that you make a copy available to the committee and ask unanimous consent that it be included in our hearing record, Mr. Chairman.

Mr. CONYERS. It will be.

Mr. McDONNELL. We will certainly do that.

Mr. McCANDLESS. Thank you.

[The information follows:]

April 12, 1993

SUMMARY RESPONSE OF McDONNELL DOUGLAS CORPORATION TO THE REPORT OF THE INSPECTOR GENERAL

INTRODUCTION

On January 14, 1993, the Office of the Inspector General (the "IG") for the Department of Defense produced a report entitled "Government Actions Concerning McDonnell Douglas Corporation Financial Condition During 1990." The Report summarizes the IG's previous charges that "Air Force officials implemented a plan of action to provide financial assistance" to McDonnell Douglas Corporation ("MDC") during August 1990 to December 1990.

According to the IG, the Air Force provided financial relief to MDC by: (1) using understated Estimates At Completion ("EAC") in calculating the amount of progress payments made to MDC; (2) improperly authorizing a retroactive accounting practice change so that Procurement appropriations were used to pay for development work; (3) improperly establishing a contract line item for completing assembly of the T-1 aircraft; (4) prematurely accepting completion of the T-1 assembly contract line item; and (5) entering into a contract modification for a schedule known to be unachievable and based upon inadequate consideration from MDC. The facts do not support any of these assertions.

The IG Report does not examine whether there was a plan to provide financial assistance to MDC. Rather, it starts from the previously drawn conclusion that there was such a plan. The Report's conclusions are based on the IG's "belief" of what occurred. In the Report, the IG substitutes his judgment in place of that of the experienced public servants charged with managing the C-17 Program. The facts show that far from a "bailout", the Air Force refused to make any progress payments on the C-17 Program for almost two and one-half months during the summer of 1990, when MDC's costs exceeded $100 million per month. In fact, the Air Force paid MDC $345.9 million less than MDC thought it was entitled to during 1990.

SUMMARY OF RESPONSE

During 1990, MDC sought timely payment of what it was owed under its contracts. Far from providing financial assistance to MDC, the Air Force refused to make any progress payments on the C-17 Program for almost two and one-half months during the summer of 1990, when MDC's costs exceeded $100 million per month. On October 3, 1990, MDC was paid $81.2 million out of $316.8 million in billable costs which DAC had incurred through September 2, 1990. During the remainder of 1990, the Air Force paid MDC

$326.6 million in progress payments despite MDC's view that it was entitled to $345.9 million more during that year.

The Air Force's refusal to pay was based in large part on the apparent depletion of Congressional appropriations for the development effort. Yet, if the Air Force had administered the Contract as it had at least one other major weapon system contract with similar terms, then no delay in payment would have occurred.

No company could indefinitely finance 100 per cent of the costs for the C-17 Program without suffering financial injury. As a result, MDC advised the Air Force that it was considering stopping work on the C-17 Program. Ultimately, MDC decided not to take that step even though MDC has never received all of the payments it has been entitled to receive under the Contract.

MDC's FINANCIAL CONDITION DURING 1990

1990 was an extraordinary year for MDC because a number of large development programs were approaching production, requiring substantial outlays of cash. MDC was performing three major fixed-price Government development contracts -- the C-17 Airlifter for the Air Force, the T-45 Training System for the Navy and the A-12 Avenger for the Navy. At the same time, MDC was engaged in the development, flight test, and initial production of a wide-body, commercial tri-jet known as the MD-11. During 1990 alone, MDC invested $1.1 billion in the MD-11, primarily to finance its initial production.

MDC had sufficient sources of capital to meet its anticipated needs. During 1990, however, the Government did not pay substantial amounts of progress payments on the A-12, T-45 and C-17 contracts. Those reductions in payments meant that MDC was required to invest an additional $800 million in those programs during 1990. These cash needs were addressed principally through cost reduction initiatives and increased borrowings.

C-17 CONTRACT

Douglas Aircraft Company ("DAC"), a division of MDC, won the competition for the C-17 Airlift Transport System in 1981. The C-17 is an all-weather, air-refuelable aircraft that can operate from small, austere airfields to deliver troops and all types of military cargo for both intratheater or intertheater operations. The C-17 Contract calls for full-scale engineering development ("FSED") of one flight test aircraft and two ground test articles (with associated equipment). It also includes initial production options.

When the C-17 Contract was awarded, the Government and MDC assumed that the Program would be low risk and streamlined and would be administered like a commercial program. MDC believes that these fundamental assumptions of the Contract have been changed. The changes have resulted in increased MDC effort, and an aircraft design which is significantly more advanced than the design contemplated at the time of the FSED contract award, for which MDC is entitled to be compensated. Moreover, underfunding resulted in several schedule restructures, which delayed the Program.

RDT&E FUNDING SHORTFALL

The Congress divides appropriations for the Armed Services into a number of general categories, such as Research, Development, Test & Evaluation ("RDT&E"), Operations & Maintenance and Procurement. Through various appropriations statutes and regulations, the Government generally is prohibited from spending for one purpose amounts which had been appropriated for some other purpose.

In July 1990, the Air Force advised DAC that it believed it did not have sufficient RDT&E appropriations available to pay progress billings for the C-17 development effort, because all Fiscal Year ("FY") 1990 RDT&E funds had already been expended. This funding shortfall, however, was wholly dependent on the Air Force's allocation of costs to its separate funding accounts, and could have been avoided if the Air Force had adopted a funding allocation method that had been used on similar contracts for major weapon systems.

In 1990, the fixed price incentive type contract for the C-17 set forth a single aggregate target cost, target price and ceiling price for the combined FSED and production efforts. Delivery payments under the Contract depended only on the relationship between total costs and the ceiling price. Consequently, there could not be separate FSED and production overruns under the terms of the Contract, only an overrun of the entire Contract. Yet, the Air Force's allocation of funding effectively created a separate FSED ceiling price for progress payment purposes. The Air Force could have avoided this dilemma by allocating progress payments between RDT&E and Procurement appropriations in the same proportion that the delivery billing prices of the development and production line items bore to the Contract's aggregate billing prices. If it had done this, as MDC requested based on the terms of the Contract and the Air Force's previous practice, then the Government would not have been obligated to pay more than the amount of RDT&E and Procurement funds available to pay these prices.

Instead, the Air Force allocated payments to either the production effort or the development effort, based on costs incurred rather than on the fixed delivery billing prices payable by it under the Contract, which led to the exhaustion of RDT&E funds. As a result, approximately $14 million was withheld from the progress payment approved by the Administrative Contracting Officer ("ACO") on July 17, 1990.

CLASSIFICATION OF ENGINEERING COSTS

DAC, which believed it was entitled to payment under its Contract, addressed the funding shortfall with Air Force officials in a series of meetings starting in July, 1990. DAC personnel explained the "aggregate pricing" allocation method and provided three examples of other contracts, including an Air Force contract, which had used such an approach. The System Program Office ("SPO") rejected this approach based on its view of fiscal law constraints; however, the SPO proposed examining whether certain charges were more properly related to production cost objectives rather than FSED cost objectives, and, therefore, could be transferred by mutual agreement.

In the case of certain engineering costs, DAC had been allocating all costs to cost objectives associated with development. However, as early as 1988, DAC had discussed with the Air Force the need to define the transition point between production-related (sustaining) engineering and development-related (nonrecurring) engineering effort. In 1990, the Air Force suggested using the point at which 90% of the engineering drawings for the C-17 aircraft had been released as the point of transition from development to production for certain engineering costs based on Air Force Systems Command Pamphlet 800-15, Acquisition Management, Contractor Cost Data Reporting (CCDR) System. This Pamphlet states that the preferred method for making the transition from nonrecurring to sustaining engineering is to select an appropriate point in time, preferably a point which represents "design freeze." There was no such specific point in the C-17 Program because of the high degree of concurrency between the development and production efforts. In the absence of such a reasonably specific point for this calculation, the Pamphlet provides for use of the point when 90% engineering drawing release is reached.

Use of 90% drawing release as a transition point implicitly recognizes that some production-related engineering effort occurs before the transition date, and that some development-related engineering effort occurs after the transition date. Because that event had occurred in November 1988, this approach requires that certain already incurred engineering costs be transferred

from FSED to production cost objectives on the C-17 Contract.[1] Those costs incurred after November, 1988, would be prorated across all aircraft in production at the facility for each relevant time period. Between September 15, 1990, and October 31, 1990, this approach was discussed on numerous occasions with the DPRO, DCAA and the SPO. During this period, DAC personnel briefed the Air Force on the effect of using this approach for 'rejournaling' engineering costs from FSED cost objectives to production-related cost objectives. After thorough consideration and review, this approach was approved by the appropriate contracting officers. Thereafter, DAC implemented this approach in its November 1990, progress payment billing.

As a result of the rejournaling, certain costs were transferred to the C-17 production lots in the following amounts:

Lot I	$ 52,298,766
Lot II	105,302,665
Lot III	13,005,087

DAC did not receive any amount in progress payments during calendar year ("CY") 1990 that it would not have received anyway, without the rejournaling of costs, because the FY 1991 RDT&E appropriation thereafter provided sufficient funds to pay incurred development costs.[2] Moreover, this rejournaling did not constitute an accounting practice change according to the DCAA.

PROGRESS PAYMENT ADMINISTRATION

In a letter dated May 24, 1990, the ACO requested an updated EAC from DAC in seven days. As a result of the request, DAC completed a new EAC in June, 1990 in the amount of $6.465 billion.[3] On August 14, 1990, a joint SPO/DPRO team questioned DAC's EAC because, as completed, it was not traceable to Cost

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[1] Under this approach a limited amount of costs were also transferred to the contract line item on the C-17 Contract for the Lot III long-lead procurement. Eventually those costs would become part of the separate Lot III production contract.

[2] The only effect of the rejournaling in CY 1990 was to accelerate, by approximately two months, the payment of funds associated with the rejournaling. In December 1992, the Government unilaterally reduced progress payments to eliminate the effect of the rejournaling. MDC has since filed a claim for those amounts.

[3] This amount included $51 million in estimated costs to perform an option to refurbish test aircraft for delivery.

Schedule Control System cost accounts. Based on this determination, the Air Force suspended all progress payments, including payments for the production effort.

The Government stated that it had suspended progress payments pending the development of a comprehensive, "bottoms up" EAC even though neither the Contract nor the regulations required such a process as a condition for receiving progress payments. No progress payments at all were made in August and September, resulting in an unpaid balance of more than $300 million.

DAC began the process of preparing a new comprehensive, bottoms up EAC. A new EAC of $6.566 billion was submitted through the SPO on September 29, 1990. The EAC was slightly below the contract ceiling price and would have justified a full resumption of progress payments if there had been no funding issues. DAC asked the ACO to use the DAC EAC for progress payment purposes, and it was used for one progress payment on October 3, 1990. While the IG Report criticizes use of this EAC, it was the only bottoms-up EAC in existence at the time. The Report does not even attempt to identify any flaws in the estimating procedures used. And, as a result of suspending progress payments for two months and the failure to adequately fund the development work, the EAC was only used to support an

$81.2 million progress payment -- out of $316.8 million in billable costs which DAC had incurred through September 2, 1990.[4]

After the October 3 payment, an EAC of $7.1 billion, an amount in excess of the ceiling price, was used by the Government for progress payment purposes during the rest of 1990, resulting in a reduction in the payments made by a loss ratio factor. In August 1990, the Government produced three EACs -- $7.640, $6.834 and $7.275 (in billion dollars). The Government's three EACs were simple trend analyses, which ignored plans and actions to improve performance. The EAC used to compute the loss ratio was a simple arithmetic average of these three EACs and DAC's EAC of $6.566 billion. As a result, three of the four estimates used for progress payment purposes assumed no improvement in performance, and, therefore, gave undue weight to that

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[4] In fact, DAC had incurred $386.5 million in billable costs through the end of September, 1990, before the time Progress Payment No. 97 was paid on October 3, 1990. Not even the IG Report suggests that this amount of costs would not have supported the October 3, 1990, payment.

assumption.[5] The Table attached as Appendix A illustrates how the Government's withholding of payments on the C-17 Program grew to $345.9 million during the last half of 1990.

MDC's EFFORTS TO OBTAIN PAYMENT

MDC Chairman and Chief Executive Officer, John McDonnell, and other senior MDC officials held a series of meetings with Government officials regarding progress payments between late August 1990 to early October 1990. In those meetings, MDC did not ask for special consideration based on its financial condition.[6] MDC informed the Government that it did not have an unlimited capacity to finance the C-17, A-12 and T-45 development programs in the absence of progress payments, along with its planned commercial build up and the continuing normal demands of its defense business. MDC officials did not advise the Government that MDC was on the verge of bankruptcy. The longer MDC continued to work without payments, however, the more serious the potential financial injury to MDC. As a result, MDC told the Government that it was considering a work stoppage on the C-17 Program, based on its contractual rights, if the Government failed to meet its obligation to make progress payments.

A series of meetings were held on October 2, 1990, concerning progress payments on the C-17. The obstacles to C-17 progress payments were reviewed and discussed in the meetings. In particular, the Air Force suggested that rejournaling could be an appropriate solution to the funding shortfall. The Air Force did not, as the IG Report alleges, commit to pay $300 million (or any other amount) in progress payments at this or any other meeting. There was, however, a large enough possibility of significant progress payments for senior MDC officials to

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[5] Finally, the IG Report criticizes the fact that Progress Payment No. 99 was paid on November 20, 1990 -- less than thirty days after Progress Payment No. 98, which was paid on November 1. While the contract provides for an interim period of at least 30 days between progress payments, the IG's Report simply glances over the fact DAC was required to self-finance over $300 million in costs incurred as a result of the suspension of progress payments for over two and one-half months. In fact, during the six month period from July 1990 to year end, DAC received five payments, one fewer payment than what the Contract provided for.

[6] Eventually, on January 24, 1991, MDC did ask DOD to make advance or unusual progress payments based on MDC's financial condition. MDC subsequently withdrew this request before the Government took any official action.

conclude that MDC should continue work on the C-17 Program for at least the month of October.

During the remainder of 1990, MDC was paid $326.6 million in C-17 progress payments. In MDC's view, it was entitled to $345.9 million more in 1990. The Government reduced progress payments applying a loss ratio calculated by using a Government EAC approximately $500 million higher than MDC believed was then warranted.

MDC continued working on all three of the major fixed-price development programs during the rest of 1990. MDC's cash condition was addressed principally through cost reduction initiatives and increased borrowings. In July 1990, MDC had announced a plan to cut more than $700 million annually from MDC's cost structure by, among other things, reducing the size of the work force by 14,000. By year end, total employment had been reduced by 15,000 and the anticipated annual savings exceeded the announced goal. MDC also increased borrowings, replacing committed lines of credit through a $750 million Revolving Credit Agreement which was finalized in December, 1990.

T-1 ASSEMBLY COMPLETE

The IG contends that the modification of the Contract establishing T-1 Assembly Complete as a separate Contract Line Item Number ("CLIN") and the Government's subsequent acceptance of that CLIN were improper acts and designed solely to provide financial relief to MDC. In fact, the addition of T-1 Assembly Complete as a CLIN was but a small portion of the consideration involved in the schedule restructure modification, P00304, and did not increase the price of the contract.[7] Furthermore, the Government's acceptance of T-1 Assembly Complete was fully in accordance with the provisions of P00304 and the negotiated agreement which specified the conditions upon which the T-1 Assembly Complete CLIN would be accepted.

In 1982, when the C-17 Contract was originally awarded, the Program schedule projected first flight to occur approximately four years after award. First flight was designated as one such progress payment liquidation point pursuant to the original Contract. Contract Modification P00304 reset first flight, which previously had been slipped three times due to funding shortfalls, for June 1991. This meant that MDC would not submit

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[7] Among other things, MDC agreed to perform additional work at its expense until the responsibility for schedule delay was determined.

the first flight delivery billing to the Government until almost ten years had elapsed since initial contract award. Accordingly, in the Spring of 1990, MDC asked that an earlier delivery payment be made for the completion of the assembly of the T-1 aircraft.

On December 21, 1990, MDC certified to the Government that the assembly of T-1 had been completed in accordance with the requirements of the June 1990 Memorandum of Understanding ("MOU") incorporated into Modification P00304. Certain exceptions to the "target conditions" defined in the MOU were fully disclosed to the Government and the Air Force determined, as required by the MOU, that any remaining assembly work could be completed without significant impact to planned ground and flight test operations. Those exceptions were specifically set forth as an attachment to the Certificate of Completion, as was a description of areas in which the "target conditions" were exceeded. The Air Force was given every opportunity to and did thoroughly inspect T-1 prior to acceptance of MDC's Certificate of Completion and making the liquidation payment occasioned by delivery of this CLIN. The DPRO declined to participate.

The IG mistakenly asserts that MDC's receipt of the liquidation payment occasioned by acceptance of the T-1 Assembly Complete CLIN somehow dramatically improved MDC's financial condition. MDC's financial condition was improved only by the receipt of the $16 million delivery payment, an amount which MDC was otherwise entitled to receive under its original Contract at the time of first flight in 1991.

THE PROGRAM SCHEDULE

The IG charges that the Air Force and MDC agreed to modify the Contract by incorporating a schedule known to be unachievable and without adequate consideration, all in furtherance of a plan to afford MDC financial assistance. The Report charges that in September, 1990, and before the execution of P00304, the C-17 SPD, and Defense Contract Management Command had concluded that MDC could not meet the deadlines set forth in the previously negotiated program schedule. The schedule resulted from an agreement between MDC and the Air Force in November, 1989, and required the delivery of four aircraft in FY 1991. The schedule was based on planned performance improvements. Although the Program had experienced scheduling and related problems in the past (many of which were the result of Government-caused delays), MDC undertook a program of hiring and management action to improve performance and efficiency, while controlling costs. The schedule involved a commitment from both MDC and the Air Force to resolve the problems that had delayed the program in the past. MDC undertook serious management efforts to meet its commitments following the establishment of the schedule and during the eight

months of negotiations which then ensued before a formal contract modification incorporating that schedule was definitized. MDC believed its efforts were succeeding and that it could achieve, and was achieving, the milestones set forth in the schedule which was used for its EACs.

MDC's FINANCIAL REPORTING AND PUBLIC DISCLOSURES

In testimony before the Legislation and National Security Subcommittee of the House Committee on Government Operations, a former DAC employee described certain internal analyses in May, 1990 projecting an overrun of $1.2 billion to $2.1 billion on the C-17 contract. All of those internal projections, which were initiated by MDC management, were preliminary and assumed no improvement, and in some cases deterioration, in cost performance.

MDC management implemented a number of dramatic management and cost savings initiatives designed to improve performance. These initiatives included:

- Focused management attention on improved planning, heightened accountability and cost control;
- Reduction in the composite cost structure (overhead);
- Work force reductions on the C-17 Program (direct labor);
- Transfer of critical skilled personnel to Long Beach;
- Cost and schedule control program for major suppliers;
- Close monitoring of action plans and their execution.

MDC implemented and tracked plans to achieve the cost reduction initiatives. For example, total headcount at DAC was reduced from 51,611 to 43,523 from May 1990 to the end of the year. On the C-17 Program, total headcount, which had exceeded 9,500 had been reduced by the end of the year to 7,731. MDC's actions had a positive effect on its cost performance as a Cost Performance Index ("CPI") for the C-17 Contract reflects. That chart is attached as Appendix B.[1]

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[1] The CPI is an indication of efficiency with which work has been accomplished. The CPI is the ratio of the Budgeted Cost of Work Performed to the Actual Cost of Work Performed.

Based on its plans, MDC management reasonably believed that cost performance would improve and had reasonable bases for estimating that the costs at completion would amount to $6.465 billion. That amount served as the basis for MDC's financial reports for the second quarter of 1990. MDC's management did not believe the higher preliminary projections were reasonable in light of its initiatives.

MDC properly reported the increases in the EAC for the C-17 Contract. Because of prior increases in the EAC and pending verification of the projected performance improvements, MDC suspended the accrual of earnings on the C-17 Contract, effective for the second quarter of 1990.

In its filing for the second quarter of 1990 with the Securities and Exchange Commission ("SEC"), MDC explained that the EAC was based upon the assumption that stringent cost reduction goals would be achieved. MDC's Form 10-Q for the second quarter stated:

> "The estimate of cost at completion for the development and initial production of the C-17 Airlifter has also increased since the contracts were entered into. The current estimate of cost at completion is based in part on the assumption that increased productivity of the direct labor force, increased production efficiency from the C-17's advanced tooling, and stringent cost reduction goals will be attained. While MDC believes, based on information currently available, that the benefits attributable to these assumptions will be achieved, any substantial increase in the estimate of cost at completion would have substantial negative impact on future earnings. Because of prior cost growth in the program and pending receipt of more data verifying that the projected performance used in the current estimate of cost to complete C-17 contracts is being attained, MDC has suspended the reporting of earnings on these contracts effective with 1990's second quarter."

In August and September 1990, MDC developed a new EAC using a comprehensive, "bottoms-up" approach. At the conclusion of that almost two month process, MDC estimated that costs at completion would equal $6.566 billion.

In its filing for the third quarter of 1990 with the SEC, MDC explained that estimated costs at completion had increased to the point where it was estimated that performance of the Contract could be at or near breakeven. Accordingly, at the end of the quarter, MDC reversed the remaining $93 million of pretax earnings previously recorded. Contrary to the IG Report, MDC did not understate the EAC on the C-17 Contract in order to defer recognizing a loss in its third quarter 1990 financial reports.

April 12, 1993

APPENDIX A'

A	B	C	D	E	F	G	H
PPR No.	Date of Submittal	DAC EAC	Gov't EAC's	EAC Used	Amt Reqst'd By DAC	Amt Paid	Shortfall Column F minus G
96	7-17-90	6.414	6.737	6.413	231.6	217.6	14.0
97a	8-90	6.414	7.640 6.834 7.275[12]	---	23.8[10]	0[11]	23.8
97b	9-14-90	6.414	Same as 97a	---	81.2[13]	0[14]	81.2
97	10-1-90	6.566	Same as 97a	6.566	316.8	81.2	235.6
98	10-29-90	6.566	Same as 97a	7.1	386.5	59.2	327.3
99	11-08-90	6.566	7.225[15]	7.1	459.5	123.9	335.6
100	12-10-90	6.566	7.225[16]	7.1	489.5	143.6	345.9

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[9] Dollar amounts are in millions of dollars for the amounts requested, amounts paid, and for the shortfall, and are in billions of dollars for the EAC estimates of DAC and Government.

[10] This excludes $85.3 million in costs for development effort.

[11] ACO suspended progress payments.

[12] In August 1990, the Government developed three different estimates to complete: OSD-$7.640, AFSC-$6.834 and SPO-$7.275 (all in billions of dollars).

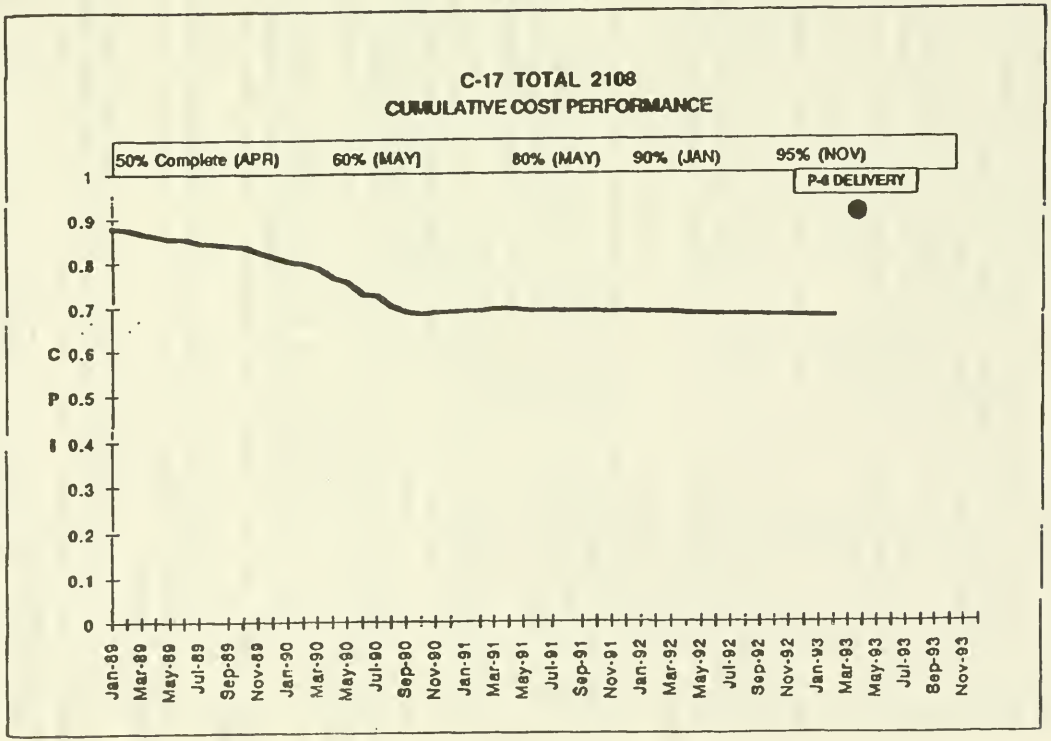
[13] This excludes $235.6 million in costs for development effort.

[14] The ACO again refused to make payments.

[15] On October 31, 1990, the Government EAC Review Team estimated the EAC at $7.225 billion.

[16] DPRO alleged that the EAC in November 1990 increased to $7.324 billion, based on a simple average of the DAC EAC and the EACs which had been computed by the Government.

APPENDIX B


C-17 TOTAL 2108
CUMULATIVE COST PERFORMANCE
50% Complete (APR)
60% (MAY)
80% (MAY)
90% (JAN)
95% (NOV)
P-8 DELIVERY
C P I
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Jan-89
Mar-89
May-89
Jul-89
Sep-89
Nov-89
Jan-90
Mar-90
May-90
Jul-90
Sep-90
Nov-90
Jan-91
Mar-91
May-91
Jul-91
Sep-91
Nov-91
Jan-92
Mar-92
May-92
Jul-92
Sep-92
Nov-92
Jan-93
Mar-93
May-93
Jul-93
Sep-93
Nov-93

Mr. MCCANDLESS. You stated—McDonnell Douglas has stated that the C–17 has turned the corner, and many of us wonder which corner you turned, but we won't go into that. Yet substantial costs for repairs, retro fits, redesigns, remain outstanding.

For example, the cost of the wing repairs is estimated to be at $50 million. How much more are we going to expect for flap modification, slat repairs, the landing gear fixes, the software completion, the engine redesign, and the testing delays that are expected? Where are we respect those costs?

Mr. MCDONNELL. Let me first answer generally, and then I would like to call on Mr. Swain to respond to your specific questions relative to that.

This program, the C–17 program, development program is not atypical of what happens in most major development programs. This program has had no more problems than most of those programs have had.

The items you bring up are all very normal events that occur in a test program. The purpose of a test program is in fact to find the problems and get those problems fixed.

And as you pointed out, in the case of the wing, there our estimate is that it will take approximately $50 million overall to get that fixed, that all being within the development program and so in effect paid by McDonnell Douglas Corp.

Mr. MCCANDLESS. You opened a door to another closet, I am sorry to say. You say these kinds of things are a part of a defense contract for the development of a piece of equipment. How far behind the time-line schedule are you in the C–17 program?

Mr. MCDONNELL. That I would like to have Mr. Swain answer, because it is not a simple——

Mr. MCCANDLESS. Is that time line considered normal?

Mr. SWAIN. I am afraid I am not going to give a simple answer, but I will do my best. This program started the engineering phase——

Mr. MCCANDLESS. Let me shorten it up, because time is pretty important here and the chairman has been very generous with my time in the past.

When were you scheduled to have the program completed, one test model, five production models, with all the engineering and modifications necessary to go into lot 3? When did you sign the original contract?

Mr. SWAIN. We signed the original contract in 1985. With reference to that, I would say we are about 2 years behind. The contract got reset three times due to underfunding of the R&D program.

In reality, my best estimate, due to our own performance, we are about a year behind.

Mr. MCCANDLESS. We were talking here about the retrofits or repairs or redesigns.

Mr. SWAIN. Let me go down the list, sir.

On the wing, as John said, the $50 million primarily is from the development contract, which is a fixed-price contract, and which we are taking an operating loss to do that. The majority of the cost is to retest the wing. It is not the cost to repair the wing on an airplane, which is not very much, but the testing associated with that

is expensive but important to verify the quality of the design we want to provide the Air Force.

The flaps and slats are similar. We found on our flight test program we have to make a material change. We have now completed that design. The design cost, the testing cost, the retrofit on airplanes delivered and a retrofit cost on lot 3 are borne by our company.

The landing gear you mentioned, there is no measurable cost impact. We had a test incident. There is no redesign issue on the landing gear.

The engine mod, as your question at least implies, our engine is below the original specification. What we are doing in working with the Air Force is to ensure that we keep this engine as close to the commercial version as possible, which is the right economic decision for the taxpayer. What we will do is incorporate the commercial engine upgrade, which will result in no significant cost increase.

The software development, this is a heavily softwared airplane. That is how we reduced costs for the long term. Those costs are development costs and part of the original contract. Those do not cause a cost increase to airplanes not yet delivered. There is no significant retrofit cost.

Mr. MCCANDLESS. So all that retrofitting, repair, redesign, whatever, is included in the $6.6 billion contract for one test model and five production models; is that correct?

Mr. SWAIN. That is absolutely true.

Mr. MCCANDLESS. Then when we talk about cost overrun or additional money to taxpayers, that could show up in lot 3 because of additional costs in developing lot 1 and 2?

Mr. SWAIN. It could show up in lot 3 because lot 3 is an FPI contract. To the extent we grow in cost, it could show up there.

Mr. MCDONNELL. But I believe I am correct in saying that of the items that have come up so far, they will have very little impact on recurring costs in the future. Is that a fair statement?

Mr. SWAIN. To the extent it requires a retrofit on lot 3, there will be a cost increase. When we catch forward—fit, it is very insignificant. It is in the less than 2 percent category.

Mr. MCCANDLESS. Can you tell me what percent of the operational testing has been computed to date?

Mr. SWAIN. It is closer to 30 percent, sir. Let me clarify, I am sorry. I needed to listen your question more clearly.

Operational testing, the official operational capability, that has not started yet. The development testing and the flight test program and ground test program associated with development is about 30 percent complete.

Mr. MCCANDLESS. What would you say you are behind in terms of the schedule for the current operations testing and the other types of operational testing?

Mr. SWAIN. In terms of the test program itself, development test program, it is going more slowly than we, our company, would like. But it is progressing. We have now tested the airplane in every corner of the operating envelope, and we are into doing what I call failure testing to understand what the airplane does under adverse conditions.

Mr. MCCANDLESS. We didn't talk in terms of one aspect which I alluded to. The completion of the software, to which I understand a solution has yet to be found, am I informed correctly, or do you have solutions to the software that you are ready to apply to the finished model?

Mr. SWAIN. We have solutions to the software, sir. We have about 95 percent of all the software I would describe as frozen. We believe it will be the final delivered software.

The flight test program itself provides information and data that requires some software to be refined, and we are doing that. Certain of our flight control computers have one or two more minor upgrades as we get more flight data. That is one of the purposes of flight test program.

Mr. MCCANDLESS. The original specs for the C–17 called for the aircraft's ability to carry 167,000 pounds 2,700 nautical miles. The current specs require that the plane be able to carry 160,000 pounds at 2,400 miles.

Now, we are talking about various and sundry modifications. What further reductions would we expect in the capability of the plane, either its carrying capacity or its range?

Mr. SWAIN. I will give you a current status of what the airplane can do that we have delivered today, and give you at least where I think we are going to end up.

The airplanes we have delivered today, one airplane was taken by the Air Force at the end of January loaded with over 160,000 pounds and flown greater than 2,400 nautical miles, which is our requirement. They loaded the airplane like they would use in an operation. When you evaluate our airplanes that are delivered today against our contract, which has some very specific constraints on details like fuel-heating values, exactly what flight profile, speed, we are short the contract specification. We are short of that specification about 5 percent.

We have a plan in place and are gathering data to improve the drag, reduce the weight of the airplane, increase the maximum takeoff weight of the airplane, and incorporate the commercial version of the engine improvement to ensure we don't add additional cost to the engine. That will get most of the range and payload back.

Mr. MCDONNELL. If I might add, even today, still somewhat short of the actual specification, the using command says very strongly it is satisfactory for operational requirements.

Now, as Mr. Swain indicated, we are working very hard to make minor improvements in various ways to get that airplane up to specification, and again, that is something that occurs in almost every airplane that is developed, that you have to work during the development program and the test program to improve it, to get it up to its specification capability.

Mr. MCCANDLESS. Thank you, Mr. Chairman.

I have one request. Congressman Chris Cox, a member of the full committee and a ranking minority member of one of the subcommittees, has asked unanimous consent that a statement he wishes to make be entered into the record.

Mr. CONYERS. We would be pleased to receive it into the record.

[The prepared statement of Mr. Cox follows:]

STATEMENT OF THE HONORABLE CHRISTOPHER COX

SUBCOMMITTEE ON LEGISLATION AND NATIONAL SECURITY

APRIL 23, 1993

Mr. Chairman:

I appreciate the opportunity to participate in these hearings this morning. As you know, California is the home to the production line to the C-17--a few short miles outside of my district--as well as more than 20% of our nation's defense department assets. Defense spending has been slashed by nearly 1/3 in real terms since 1985, and the additional defense outs proposed by President Clinton make it doubly important for this Committee to help Congress decide which programs are essential to preserving our national defense.

The focus of these hearings has been the historical financial problems on the C-17 contract between the Air Force and McDonnell-Douglas. Because the wise use of taxpayer dollars is essential in protecting our national security, this is an important inquiry. There is a second point, however, which has received far less attention by this Committee, but is perhaps equally important: What is the strategic role and requirement for a long range airlifter?

As the average age of our current fleet of C-130s, C-141s, and C-5As climbs beyond 20 years, the ability to undertake far flung military operations becomes more uncertain, and the success rate for those we pursue becomes less assured. Some defense analysts believe that a Somalia-type operation will become nearly impossible in five years time if a replacement fleet is not fielded.

If we conclude that a requirement exists for a long range airlifter, it is our job to determine what is the most cost effective method of procuring such an aircraft. Should we purchase older planes such as the C-141 or the C-5A? Should we focus on developing an all new aircraft which might be ready for production in the next century? Or do we proceed with production of the C-17? This is one of the more important decisions we will make here during the 103rd Congress, and I hope that our witnesses can shed light on these matters.

Again, Mr. Chairman, I appreciate the opportunity to join you this morning, and I look forward to the testimony of our witnesses.

Mr. CONYERS. Thank you very much, Mr. McCandless.

The Chair is pleased to recognize the gentlelady from New York, Mrs. Maloney.

Mrs. MALONEY. Thank you, Mr. Chairman.

Do you agree with the previous testimony and the current government estimate that McDonnell Douglas will incur a loss of close to $1.2 billion, and if in fact that is accurate, would McDonnell Douglas be able to absorb financially any loss or overrun in the C–17 program?

Mr. MCDONNELL. Let me respond to the second part and then I would like Mr. Lanese, our financial officer, to respond to the first part.

McDonnell Douglas is now in a financial condition that is strong and getting stronger. We have just released our first quarter results yesterday. It indicated—in fact, we did reduce in the first 3 months this year our total debt by about $300 million. We will be reducing our debt significantly during the course of this year. Our earnings in the first quarter of this year were the highest in our history.

And so from a financial point of view, we have the financial capability to see this program to completion and put in whatever amount of money is required on our part based on the contract that we have.

Mrs. MALONEY. So, in other words, Mr. McDonnell, the American taxpayer will not pay any more than the $6.6 billion that was the approved upon contract with the government?

Mr. MCDONNELL. The American taxpayer will only pay what is required under the contract.

Now, we believe part of the overrun is caused by actions taken by the U.S. Government, and so we will have and will be filing some claims, but it will only be what is finally determined as the responsibility of the U.S. Government.

Mrs. MALONEY. How much do you estimate will be the responsibility of the U.S. Government in changing specifications or whatever?

Mr. MCDONNELL. I really cannot estimate that. That is something that has not yet really progressed very far in the way of negotiation or litigation, if necessary.

Mrs. MALONEY. Thank you.

Mr. LANESE. May I respond to your question?

The original ceiling on the C–17 contract was $6.4 billion. It is our best estimate today that that contract when completed—and this is full-scale development plus lots 1 and 2 production lines—will total approximately $7.6 billion. So that is an increase of $1.2 billion from the original ceiling on the contract.

If I may, I would break that down to three pieces. The first is, there has been changes on the contract. Added work, and that accounts for about $200 million of the $1.2 billion.

Additionally, of the billion that is left, about half of that billion comes from items that are what I would categorize as unknowns, things that occur that couldn't be predicted through the estimating process. That balance of $500 million is nonperformance on the contract. That is goals that we had to improve, performance that we were not able to achieve for one reason or another.

As far as what McDonnell can absorb, as John just testified, we will be filing claims because we believe we have been harmed by certain actions of the government in performance of the contract, so we believe we have certain rights.

Over and above that, we have already taken from a financial standpoint the burden associated with this overrun condition, and as a matter of fact. McDonnell Douglas already has supported the program to the tune of $1.2 or $1.3 billion of McDonnell Douglas's money during this period.

The cash-flow penalty has already taken place on us. The issue is one of earnings. I think that is already taken place as well, too.

Mrs. MALONEY. During this hearing we have had many discussions on costs. No one disputes that McDonnell Douglas was incurring tremendous costs.

The question is, were these costs in excess of the cap on the research and development portion of the contract?

Mr. LANESE. I am not sure, Representative Maloney, if I can answer that specifically.

We have from a contractual standpoint one contract, but within that contract those funds are broken down into certain pots, and there is an R&D pot and there is a production pot. And I am not familiar with the contents.

I am familiar with the overall—the overall is the $6.4 billion I just discussed—and our current estimate is $7.6 on the total, and that is the development program as well as lots 1 and 2 production contracts.

Mrs. MALONEY. Was there not a cap on the research and development portion of the contract, and had McDonnell Douglas already reached the cap without completion of that term of the contract in 1990?

Mr. LANESE. Are you referring to the payment situation?

Mrs. MALONEY. The payments in 1990.

Mr. LANESE. There was an issue in 1990 that was called the color-of-money issue with the government. And that issue involves really two principles. No. 1, we have a single ceiling contract, so from McDonnell Douglas's standpoint we had a contract to develop and build the aircraft for a certain price. However, within the procurement process, the government separates funds into R&D funds versus production funds.

And there were some limits set within what I would call the payment or procurement process as to the amounts of each of those. That became an issue during this payment period, as a matter of fact, because there were some funding issues related to how much money was available in the R&D fund versus in the manufacturing fund.

From my standpoint, I am totally indifferent to that. That doesn't really matter to me as a point of law because I have one contract with one ceiling, and I was performing in my mind against that contract with that ceiling.

Mrs. MALONEY. As the main ceiling.

The claims that you mentioned you will be filing in the future, are they mentioned in your most recent financial reports?

Mr. LANESE. Yes, they were. Excuse me. May I clarify something?

Mrs. MALONEY. Sure.

Mr. LANESE. By "most recent financial reports," I am referring to our public documents which we issue, our 10–Qs, 10–K, and our annual report.

Mrs. MALONEY. How much was mentioned in that report?

Mr. LANESE. Sometime in 1990, McDonnell Douglas took for accounting purposes approximately $200—$208 I think is the exact number—million that we would expect to receive as a minimum from the claims process. So as a result, that has shown on our books as a receivable, and that has been there since, I believe, 1990 and maybe even early 1991.

Mrs. MALONEY. But that is claims that are already filed.

Mr. LANESE. That is correct.

[The information follows:]

McDonnell Douglas Corporation Annual Report to Shareholders,
page 42

"As of December 31, 1992, the estimated value of the contract at completion includes $208 million of revenue from expected recovery on claims filed during 1990 and 1991 and to be filed with the Air Force. MDC's belief as to expected claims recovery is supported by an opinion of outside counsel provided to MDC that there is a reasonable basis for projecting recovery and that, based on MDC's labor, material and financial accounting records and computations, it is probable that MDC will recover an amount in excess of $208 million on the claims. As a result of further claims development, outside counsel's opinion as to the minimum amount of probable claims recovery has increased to an amount greater than $208 million. Claims development is continuing, however, and MDC has not concluded its evaluation of additional claims recovery."

Mrs. MALONEY. Are there claims that will be filed in the future, and what will those claims be?

Mr. LANESE. Yes, there will be claims filed in the future. Those claims have yet to be finalized, however, so I am not able to speak with a degree of accuracy on that, except to say we believe there will be a large number of claims that will be filed in addition to the ones previously filed.

Mrs. MALONEY. Are those claims projected in the most recent report or mentioned in the most recent report?

Mr. LANESE. No, ma'am, they are not.

Mrs. MALONEY. My final question, did you or any of your subordinates in either written or verbal communication—and I mean board members or employees—discuss the accelerated payments for the C–17 at any time with any government officials outside of the Department of Defense, outside of the Department of Air Force?

Mr. MCDONNELL. Let me respond to that one. First, relative to progress payments, we were not asking for accelerated progress payments in the contractual term. We were asking for progress payments on work that we had performed that we believed was due us.

I cannot directly answer you whether anybody in McDonnell Douglas Corp. talked with anyone else outside of DOD. I can say that our primary thrust, my primary thrust was within DOD from Mr. Atwood down, to try to get resolution of this very important issue.

Mrs. MALONEY. Thank you.

One final question. As a freshman I don't have the history of the C–5 and the C–17 that many of my colleagues have, and they often discuss it and debate the merits of both of the systems.

I am aware of the recent statements of Colin Powell, both in writing and publicly, in support of the C–17 as a vital part of our defense.

Could you clarify for me the differences between the C–5 and the C–17, and why is the C–17 so much more costly than the C–5?

What is told me by my colleagues is that it is mainly being able to stop in a very quick period, close to a battlefield. Could you clarify that for me in general terms?

Mr. MCDONNELL. Let me respond generally, then I would like Mr. Swain to talk more specifically about the relative capabilities.

The C–17 is not more costly than the C–5. If you compare a C–17 and a C–5 on a comparable basis at comparable production rates, the C–17 is a less costly airplane, and also substantially less costly to maintain and support over the lifetime of the C–17 program.

I believe some of the analyses that are going around are comparing a C–5 produced at a very high production rate versus C–17 very early in production at a very low production rate. That makes a tremendous difference in the cost. On a comparable basis, C–17 is less costly.

Mr. Swain, I would like you to comment on the various relative capabilities.

Mr. SWAIN. The primary differences between the two aircraft, first have to do with operations on the ground. And it turns out in airlift that is very, very important. The throughput, and through-

put is determined by how many airplanes you can put on a ramp in an airfield.

The C–17 has great agility. It can back itself up in position and make very, very tight turns. And we have about a three-to-one throughput advantage than the C–5. That has to do with the agility on the ground.

Second, it has been designed to minimize the long-term operating cost. Certainly, as you see, the investment of these programs are large. To get our return, we expect this airplane to operate in 30 to 50 years, for 30 to 50 years, so a long, long time.

It has been designed to have few personnel. Our plane operates with three people in it, a pilot, copilot, load master, some of that does lead us to put more computers on the plane to do that. Much fewer personnel on the ground. That reduced the life cycle cost.

Third, the airplane has a capability to get in and out of 10,000 runways around the world. Our airplane can land and take off on runways similar to the C–130 at less than 3,000 feet. And when the Air Force does their analyses or the Department of Defense on cost effectiveness, at least the latest studies in that were done late last year or early this year, showed C–17 to be the winner.

Mrs. MALONEY. I request a copy of these studies.

When this contract was originally awarded, was it a competitively bid contract? Were other major contractors able to compete for this business?

Mr. MCDONNELL. Yes, it was a competitively bid contract. In fact, if I remember right, Lockheed at that point offered a variation of the C–5 in competition with this airplane.

Mrs. MALONEY. Were you the low bidder?

Mr. MCDONNELL. This was back in 1981 that we originally won the contract. I do not know whether we were actually the low bidder, but overall our design was considered superior to the other designs offered. That is, the most overall value to the customer.

Mrs. MALONEY. Thank you very much.

Mr. CONYERS. Thank you, Mrs. Maloney.

I am delighted to call Mr. Bill Clinger, the ranking minority member of the Government Operations Committee.

Mr. CLINGER. Thank you very much.

Just a couple of questions for my part. Can you tell me, Mr. McDonnell, what is the projected fly away cost of the C–17, and how would that compare with the C–5?

Mr. MCDONNELL. Let me give a general and then turn it over to Mr. Swain.

Let me give you one point of fly away, because you hear all sorts of different numbers, depending on what is the assumed production rate, how far down the learning curve.

But we believe, for instance, taking the 60th airplane, halfway through the 120 that is planned, if we were able to be producing those airplanes at a steady rate of, let's say, 12 a year, then in 1992 dollars, the fly away cost of that airplane would be under $200 million.

Mr. CLINGER. And how would that compare to the C–5?

Mr. SWAIN. I am afraid we don't know and couldn't give an accurate projection. One would have to analyze restarting the C–5 pro-

gram from scratch. And I don't understand what the implications might be.

We have today on our program over 2,000 suppliers that are actively working this program. It is hard for me to imagine bringing that whole base back.

I would like to adjust one other data point on the C–17 in the same terms. The 120th airplane under those same conditions would be less than $160 million. We are sensitive to rate. Large aircraft are very, very sensitive to total quantities.

In a standard commercial program, we normally talk about 300 airplanes. So we are generally talking about commercial airplanes with 300 or more airplanes.

Mr. CLINGER. The original specs called for the aircraft's ability to carry 167,000 pounds and to carry that payload 2,700 nautical miles. That has been revised subsequently to the original specifications to require the plane be able to ferry 160,000 pounds for 2,400 miles. And I understand that there may well be further reductions suggested down the road.

Can you tell me what the final range payload capabilities of this aircraft are going to be?

Mr. MCDONNELL. Let me first just say, overall there has been that reduction from the original specification.

Mr. CLINGER. Why was that?

Mr. MCDONNELL. I would like Mr. Swain to respond specifically, but let me also say that the current airplane has been endorsed by the using command as being perfectly satisfactory for their operational requirements.

Now, we are working to improve the current airplane to get it back very close to or at the current specification. But even without that, the using command says that airplane meets their operational requirements.

Mr. SWAIN. On the range and payload specification, which is one of many specifications on the airplane, it was revised downward about 2 years ago before we got into the flight test program. It was done with the Air Force looking at where we were collectively on the airplane.

We had no good solutions that wouldn't add significantly to the cost of the airplane in the long term to achieve the original spec.

It is my understanding they did an analysis of the requirement to understand how important it was to them, and that led to this change. And this change occurred during some contractual negotiations where we reached agreement with the Air Force.

Mr. CLINGER. Is it true that they are contemplating additional changes in that spec with regard to payload and distance?

Mr. SWAIN. There is a possibility, sir. The reason there is really a possibility is because the airplane, without change from what we have delivered, the Air Force has taken it and flown it in excess of this range and capability. It gets into the details of the contract that specifies, I think I specified earlier, fuel, heating values, exactly the mach number, how you load the CG.

So the user took the airplane, who understands his business and what he needs, and flew it the way he would fly it, and going west to east, he achieved 2,700 nautical miles, and flying east and west,

he achieved 2,500 nautical miles, both in excess of the requirements.

Mr. CLINGER. How many airfields did you indicate the plane should be capable of utilizing?

Mr. SWAIN. 10,000 worldwide is the common assessment.

Mr. CLINGER. It is my understanding that in the initial stages of this, there was—that the aircraft that was being purchased was supposed to be able to land on nonairports, in other words, to land on other than tarmac surfaces. What has happened to that? Can this aircraft do that?

Mr. SWAIN. We believe the airplane can do that. We haven't gotten to that point in the test program to validate it.

Our requirement is to land on what is called semiprepared fields, and we believe, and I think our customer believes with us, that the airplane can do it. The actual testing and validation of that hasn't occurred yet. We think it will be validated.

Mr. CLINGER. Thank you.

Mr. CONYERS. Thank you very much.

The Chair is delighted to recognize Ms. Corrine Brown.

Ms. BROWN. Thank you.

In September 1990, did you request money from the Air Force based on the urgent and pressing financial need of McDonnell Douglas and potential adverse impact to the C–17 program?

Mr. MCDONNELL. In September we were requesting the U.S. Air Force to make progress payments that we believed were due us, and one of the reasons I was involved with that, our corporation at that point was in tight financial condition and that we could not continue to go on funding the program with our own money, without the Air Force paying us at least a portion of what was due us.

Ms. BROWN. I have a memorandum dated October 1, 1990. Would you please give him the memorandum?

Would you read for us this memorandum?

Mr. MCDONNELL. This is a memorandum from Mr. David Q. Gannes, principal administrative contracting officer.

Ms. BROWN. Just related to the payment.

Mr. MCDONNELL. The underlined part?

Ms. BROWN. Yes, sir.

Mr. MCDONNELL. "This payment is made in light of the urgent and pressing financial need of McDonnell Douglas Corp. and the potential adverse impact to the C–17 program. This financial condition was related by Mr. John McDonnell, chairman of the board and CEO of McDonnell Douglas Corp., to Ms. Darlene Druyon, staff member to Mr. Jack Welch," and so forth.

Ms. BROWN. As you know—you may not know—I am a new Member of Congress, and I pulled a law regarding payments and payment schedules, and I have a copy for everyone on the payments schedule.

Would you explain to me how a request for money that is based on financial needs complies with the statute as you read it?

Mr. MCDONNELL. As far as I am concerned, the requests that we were making was for payments due under that contract. In other words, we were requesting payments owed us by the U.S. Government under the contract, under the provisions of the contract of the C–17 development.

Ms. BROWN. Would you just read the law out loud? I am getting a different interpretation of it.

Mr. MCDONNELL. "The Secretary of Defense shall ensure that any payment for work in progress, including materials, labor and other items, under a defense contract that provides for such payments, is commensurate with the work, which means standards of quality established under the contract that has been accomplished.

"The contractor shall provide such information and evidence as the Secretary of Defense determines necessary to permit the Secretary to carry out the preceding sentence."

Mr. LANESE. May I comment, Representative Brown?

Ms. BROWN. Yes, go ahead.

Mr. LANESE. During that period of time, as you correctly noted, McDonnell Douglas had some serious financial concerns. It was a time when we had a number of major development programs coming together, and as a result our debt was rising at an increasing rate during the latter half of 1990.

The issue on the C–17 really became twofold. No. 1, McDonnell Douglas could not afford to be financing the government, we believed, on a contract the government was supposed to be paying us on, which they were not.

And No. 2, we had some financial limitations as a corporation, and if we continued to fund the C–17 program through the remainder of the year, it would have harmed us, possibly irreparably, because that amount of money would have grown from $350 million to $900 million by the end of the year.

I have read also the comment on the law, Representative Brown, and think it is important to understand, too, that is a part of the law, but the law also states that the government cannot arbitrarily cease progress payments without having material evidence before them, it can't be an arbitrary act.

We believe very strongly that that was an arbitrary act on the part of the contracting officer, thereby giving us the right to stop work on this contract. That is something we didn't want to do, yet we couldn't continue to finance the Department of Defense during this period.

So hence this became a very critical issue for us and involved a lot of very senior people.

Ms. BROWN. You are saying the government stopped payment arbitrarily on this contract?

Mr. MCDONNELL. We believe so.

Mr. LANESE. We believe very strongly that the government had no evidence to stop work on this contract, and by doing so they breached their obligation to us under that contract, and we had rights, and the rights were to stop work and that not only jeopardized us but harmed the program.

Ms. BROWN. I guess in contracts there are two sides, and I am looking at the government side. I would like to know whether or not you were in compliance.

I mean, were you doing the things that you were supposed to do in order for the government to make that payment?

Mr. MCDONNELL. We believe we were.

Ms. BROWN. We had testimony, sworn testimony, from two additional people the last time we met that said that you were very

much out of compliance with time schedules, you were very much out of compliance with quality assurance, just a whole list of things.

Mr. LANESE. May I comment again, please?

Ms. BROWN. Were they lying to the committee?

Mr. LANESE. May I comment, please?

Ms. BROWN. Yes.

Mr. LANESE. Again, it is a very complex subject, and government contracts is a very complex issue. It is reasonable to understand, I guess, or to recognize that reasonable individuals can have differences of opinion.

On this program, we had a difference of opinion regarding the estimate to complete this contract with the government representative at our Long Beach facilities. And we understood that although we thought that those differences—we interpreted those differences to be in our favor. We understand that there was a reasonable difference of opinion.

The way to resolve that, however, was not to stop paying us under the contract. There are methods under the law to do that. We took extreme exception to that. We felt that not paying us for work we legitimately did on the program was a violation of that contract. That is where this crisis arose in terms of payment.

Ms. BROWN. I am really trying to understand this, so just hang in here with me for a minute.

In listening to the testimony, what I was told was that the product that you were producing was not in contractual agreement. Quality, flaws, delivery schedule—that you were severely behind in all of these areas.

Mr. LANESE. To my recollection, there are two issues here. The first issue was a clear money issue, Representative Brown, that we talked about earlier, and that was one where from McDonnell Douglas's standpoint, we have one contract, and that one contract has one ceiling. It does not have multiple ceilings.

Ms. BROWN. Let me just ask you one question. You have one contract, or do you have two contracts? On the C–17.

Mr. LANESE. On the fixed-price development contract, and we call it contract 2108, that is the development of the airplane, plus the first two production lots, so you have commingled in this one contract development funds which come from one source or one pot within the Federal system, and production funds which come from a second pot. But as a matter of contractual law, McDonnell Douglas had one contract with one ceiling.

So the important number to us was the ceiling on that overall contract, not the portion of the funds, whether it is R&D or development, because as you may imagine, it is kind of like building a house and hiring an architect and a builder at the same time.

Ms. BROWN. I understand. I understand the cost overrun there.

Mr. LANESE. It is like building a hundred-thousand-dollar home and setting up a budget that says that the architect will cost $10,000 and the builder will cost $90,000 in completing this house. Well, the important number to me as the owner is that I am going to spend $100,000 on this home.

But when you simultaneously start to build airplanes and design airplanes, you have a tremendous amount of crossover because all

of a sudden you wind up finding the builder is doing architectural work, sometimes the architect is doing builder work, because there are not fine lines.

So from our standpoint, we recognize this development and building process sometimes came together and became somewhat confused. But from an apportionment of the funds standpoint, the government was obligated, the procurement officer, to make sure those funds were allocated properly. But that is issue one.

Issue two——

Ms. BROWN. I want to go back to issue one, because I am very concerned about the timeframe. If someone was building my house and I had given them so much money up front, I would expect by a certain timetable that we have a certain amount of product, or else I would cut off payments.

Mr. LANESE. The second issue, if you will, deals with the estimate itself, and there was a second issue regarding the estimate. We submit an estimate, and that estimate was not accepted. And it was not accepted because the procurement officer felt that that estimate required more detail.

He doubted the information that we provided to a degree to where he felt he should withhold payments until that issue was resolved.

Now, what I would argue is that certainly there are EAC issues that arise. We strongly felt, however, that in order to resolve this, there were legal ways to do this. Stopping payment for us was not one. That was a violation of the contract. You can't do that.

And we understood that because of this difference of opinion, we were willing to continue to build the airplane and develop the airplane for a limited period of time, recognizing we would be trying to submit a new EAC to the new standards we were required by the contracting officer.

We did that after completing that. We got some of that payment back to us, but still the government still owed us $350 million, even after doing that.

Ms. BROWN. I don't understand how the government can make payments to you if what you were producing is not what they contractually asked for or it wasn't on that time period or it wasn't that quality.

Mr. MCDONNELL. Under a government contract——

Ms. BROWN. We just pay.

Mr. MCDONNELL. No. Under a government contract there is provision that if it is anticipated it is going to go over the ceiling, then there is a so-called loss ratio applied.

So in fact the government does not pay up to the ceiling, and there is still work to be done. The government only gets to the ceiling once all the work is completed. And that is why this estimate at complete becomes a central issue. And that we had provided an estimate to complete, which the government representatives said were inadequate, but they had no other more substantiated estimate to complete to use, and under the terms of the contract, that does not give them the right to arbitrarily stop payment.

Ms. BROWN. In looking at this memorandum dated October 1 that I gave you, you received $71 million, and it was not for serv-

ices, but it was because they viewed that you had financial need to keep the company solvent.

Mr. MCDONNELL. As far as we were concerned, it was for services performed. In fact, that was only a small part of the money owed us for services performed.

Ms. BROWN. In looking at the memorandum, it indicated that it is not what John McDonnell said to the Air Force.

Mr. MCDONNELL. As I indicated before, what I said to the Air Force is, one of the reasons why it was urgent for us to get paid what was due us is that it was putting us into a very tight financial position. But what I was asking for is only those moneys owed us under the contract.

Ms. BROWN. Do you think the author of this memorandum is lying?

Mr. MCDONNELL. I can't——

Ms. BROWN. It is contradictory here, clearly.

Mr. MCDONNELL. What he is saying here—this is a government contracting officer—he is saying that he is paying it in light of that. As far as I am concerned, he was paying it because that was money owed to us under the contract.

Mr. CONYERS. Will the gentlelady yield to me?

Ms. BROWN. Yes, sir.

Mr. CONYERS. First of all, I want to commend the gentlelady from Florida, because I think in her inimitable style she has put her finger on a very important part of the conflict that brings us here. We are hearing at the witness table over and over again that this was money owed them for work completed.

Well, as disputants in any litigation would contend, naturally, that is the only basis they could claim any taxpayers' dollars. But the people that paid the taxpayers' dollars didn't see it that way.

And I think this is what your document proves, if I am not mistaken, because the principal administrative contracting officer is saying that I am releasing this money, a payment of $81.2 million, not because of an estimate at time of completion, not because of work done, not because of services rendered, but this payment, "is made in light of the urgent and pressing financial need of the McDonnell Douglas Corp., and the potential adverse impact to the C–17 program," which was the argument advanced by Mr. McDonnell when he personally intervened.

Therefore, it appears that this was money not paid for work completed, but I think it follows on the theory that the gentlelady of Florida is advancing. The government claims that this was an overpayment of $72 million.

Now, that is what brings us to the table, Mr. McDonnell. If we didn't have this document and others like it on other parts of the program—but may I say further, and I will give the lady her time back and more, it is very unusual for me to hear aircraft manufacturers telling us what the government owes them without having gone to court about it.

I mean, I know it is OK for you to be the claimant, but for you to have determined that the government is wrong and you are right and their reasons for paying you are not correct, and we haven't had any impartial intervention by the court process, might be construed as presumptuous on your part.

Mr. MCDONNELL. Let me respond that clearly taking this into court was one consideration on our part. However, as we all know, getting matters resolved in court takes a very, very long time. And taking that approach, the C–17 program would have been gone long before it ever got resolved in court.

So what we were trying to do is get it resolved with the U.S. Air Force on a contractual basis without having to have the courts determine what the proper resolution was.

Mr. CONYERS. I am not suggesting that the building of this aircraft be stopped until a lawsuit is filed, proceeds to trial, is litigated, and appeals are taken care of. I am merely commenting upon the fact that unilaterally, McDonnell Douglas, and apparently yourself, determines what the money you are receiving is for, and the fact that the contracting officer tells us in writing, and it looks like he might be covering himself by doing this, you are saying, well, no, that is not it at all.

I just wonder how you have become the judge and jury before this is resolved by some independent party.

Mr. MCDONNELL. I am not. As I say, from our perspective, that was money owed us. The contracting officer——

Mr. CONYERS. Did he make this up? "This payment is made in light of the urgent and pressing financial need of McDonnell Douglas Corp." Is that his invention?

Mr. MCDONNELL. As part of what we were telling the U.S. Government as to why we could not continue to go on supporting this payment without being paid is the fact we were in a tight financial position.

Mr. CONYERS. That was your assertion, and that is what he has now put into the document explaining why he made the progress payment.

Mr. MCDONNELL. But all I am saying is, from our perspective we believe we were owed that money under the contract.

Mr. CONYERS. I believe I should get more income tax back too for the returns I filed a couple of weeks ago. But so what? I mean, that doesn't give me any license to go out and start spending the money that I think the IRS owes me. Or I can't announce that the IRS made a huge mistake as a result of my interpretation of the form.

Mr. MCDONNELL. The U.S. Government had made a unilateral determination under the contract that we weren't owed money. We can't go on building an airplane at more than $100 million a month cost without getting paid. And so our position is that we were owed it under the contract, and we were telling the U.S. Government that the urgency was on the basis that we were in tight financial position.

His memorandum saying why he paid it is his business. As far as we are concerned, it was owed to us.

Mr. CONYERS. Did the contracting officer tell you, as I think he told somebody, that you were out of R&D funds and you hadn't submitted a proper estimate at completion in the first place?

These aren't just a bunch of mean guys trying to sabotage the building of the C–17, sir. These are people working with you, and I presume have the national interest at heart, and are trying to move forward on this program as well. There are reasons, and the reasons that were given us at these hearings is that you were out

of R&D funds and you needed the bread, as they say in Detroit streets.

Mr. MCDONNELL. As Mr. Lanese had explained, under the terms of the contract there was only one ceiling, and it did not differentiate between R&D funds and production funds relative to us getting paid under that ceiling. So that was an issue of the U.S. Government, not an issue as to whether they should pay us under the contract.

Mr. CONYERS. Are you aware of the law that prevents the commingling of R&D funds and production funds?

Mr. MCDONNELL. I am aware that there is a difference between R&D and production funds.

Mr. CONYERS. And that they cannot be commingled?

Mr. MCDONNELL. What I am saying is that under our contract, as far as the ceiling, there was no differentiation made. There was not a ceiling for R&D——

Mr. CONYERS. This would be the first contract that our investigative staff has ever come across that was constructed in that way.

Would you be surprised to find out that I might be right and you might be incorrect on this point? Just this point alone.

Mr. MCDONNELL. As far as the one ceiling with no differentiation?

Mr. CONYERS. Yes, that R&D and production funds cannot be commingled, not by you or anybody else?

Mr. LANESE. I agree with that, Congressman.

Mr. CONYERS. I think you should.

Mr. LANESE. But Congressman, however, that is a funding process. From a legal standpoint we had one contract. It had one ceiling. And the fact that there was a research and development piece of that and a production piece, that is a matter of the government apportioning funds properly within that one ceiling.

And what it may have meant, Congressman, is to go back and move funds from production into R&D. Again, that is an administrative process.

Mr. CONYERS. That is exactly what you agreed with me couldn't be done. We just came full circle, sir.

Mr. LANESE. I think——

Mr. CONYERS. You cannot mix. I will repeat this again. This may be important for your lawyers to pick up on.

You cannot commingle R&D and production funds. True or false? True.

Mr. LANESE. Mr. Chairman, from our standpoint we have one contract. We have one contract with one ceiling with the Federal Government. They owe us money for work performed against that. If there is an administrative——

Mr. CONYERS. Now I see why we are at this hearing. We are getting to the heart of the matter.

Do you have counsel that will back you up on that? I thought you said you agreed with me, by the way.

Mr. LANESE. Well, I think we said we agreed that we have heard that there are regulations that put moneys into pools. I think that is true.

Mr. MCDONNELL. On this contract there was only one ceiling and, yes, we have counsel who will back us up on that.

Mr. LANESE. Sir, it may be helpful, Mr. Chairman, if we maybe have both the committee staff and our own people take a second look at this contract so we can explain our point in detail. I am sorry to get into detail on this, but from our standpoint we do have this one contract.

Mr. CONYERS. Well, this committee and its staff have been exceedingly cooperative with McDonnell Douglas and all of its officials and we are going to stay that way.

I will now ask you another question, true or false, that there is one ceiling, but under the ceiling there are two different accounts that cannot be combined. True or false?

Mr. MCDONNELL. My understanding on the contract is that the one ceiling, it does not divide that ceiling into the two funds, into the R&D and the production. And our interpretation of the contract is that that one ceiling applies.

Mr. CONYERS. All right. Let me go to "Contracting 101." Here we are now going to have two accounts under one ceiling; OK? The one ceiling is not in dispute. What is in dispute is whether the two accounts under the one ceiling can be commingled or not. I will ask you again, true or false? Answer that.

Mr. LANESE. It is not a true or false.

Mr. CONYERS. I will give you the answer. You cannot commingle the funds.

Mr. LANESE. Sir, it is not a true or false, sir. May I cite an example for you, sir, if I may?

I mentioned to Representative Brown an example about a house. Where I am going to build a $100,000 house? And I have set aside $10,000 for an architect and $90,000 for a builder. What is comparable in this is that the bank has decided it will pay $10,000 for the architect and $90,000 for the builder, and that is how they have allocated their funds.

From my standpoint, I can spend the same $100,000, but spend $15,000 on the architect and $85,000 on the builder and be at the exact same point, and from that standpoint I am indifferent to that. What we are really talking about is the bank. In this case the bank was the Federal Government.

So, unfortunately, it cannot be answered true or false because we are dealing with two issues within the contract. We, by the way, do break costs down by detail. We break it down when we submit our costs billing by R&D or by manufacturing.

Mr. ENGLISH. Would the chairman yield for a question?

Mr. CONYERS. Yes. Do I need to go under oath for this question.

Mr. ENGLISH. I don't think so, Mr. Chairman.

Mr. CONYERS. All right, I would yield to the gentleman.

Mr. ENGLISH. I am a little confused, frankly, about this matter and I am sure others in the room may be, too. I am not an attorney, so I don't have the benefit of that, but it is my understanding the chairman has pointed out there is a law on the books which prohibits the commingling of these two accounts.

Am I correct, Mr. Chairman?

Mr. CONYERS. That is right.

Mr. ENGLISH. If that is correct and we have a law on the books, I was not aware you could come to any kind of contractual agreement that would override the law.

Mr. CONYERS. You deserve an honorary degree from the law school of your choice.

Mr. ENGLISH. Well, maybe I could get hired on by McDonnell Douglas to be their attorney, Mr. Chairman, because they just signed a contract that is invalid if that is the case.

Mr. CONYERS. Well, I have met so many lawyers from McDonnell Douglas, I am not sure if they need another one, Mr. English.

Mr. ENGLISH. Maybe they need someone that is not a lawyer, Mr. Chairman. Maybe that is the solution. But common sense-wise, if you have a law on the books that says this is illegal, you cannot come up with a contract that says we are going to override the law. So I think the law is what binds us here, Mr. Chairman, not the contract.

Mr. CONYERS. The Chair will now return the time to the gentlelady from Florida.

Ms. BROWN. I just have one quick question. I am confused whether you have one contract or two, but I still need to know the total amount that you have received for the C–17's because my figures say you have received $13.3 billion, and four of them were for advanced payments or something for parts, and yet we are still trying to decide whether or not the plane or the parts work. So can you explain that to me?

Mr. SWAIN. Congresswoman, I will try. At this point in time, we have more than one contract. In 1990 we had one. On the development contract, 2108, which includes the R&D and the production, which has led to this confusion, we have received to date approximately $6.2 billion. So from the government we have received, less than ceiling, the way progress payments are made, all the costs above that.

On another contract, lot 3, we have also received progress payments, and we are paid at an 85 percent progress payment rate, so we have received about 85 percent, or cost. We have long lead of moneys to protect schedules on lots after lot 3 where we go out to our suppliers and we buy parts so we can maintain schedules. We have received 80 percent of our costs on those contracts.

So each of those contracts are costing our company money. Each of those contracts the government has some money in them.

Ms. BROWN. Can you just give me a figure? A cost; a figure? Just one figure?

Mr. SWAIN. The aggregate, I don't know what the number is on all of them.

Mr. MCDONNELL. But it is certainly not $13 billion.

Ms. BROWN. If it is not $13 billion, I need to know what it is.

Mr. SWAIN. We can supply that.

[The information follows:]

C-17 CONTRACT DATA
($ in 000's)
APRIL 1993

	FSED, LOT 1 LOT II -2108	LOT III FY 90 -0001	LOT IV FY 92 -0001	LOT V FY 93 -0001	LOT VI FY 94 -0037	TOTAL
CONTRACT CEILING PRICE	6,700,343	1,215,000	N/A	N/A	N/A	7,915,343
CURRENT FUNDING	6,662,370	1,094,610	744,800	247,000	62,800	8,811,580
PROGRESS PAYMENTS	6,081,080	689,573	278,916	101,581	8,805	7,159,955
LIQUIDATED PROGRESS PAYMENTS	5,110,316	0	0	0	0	5,110,316
UNLIQUIDATED PROGRESS PAYMNTS	970,764	689,573	278,916	101,581	8,805	2,049,639
DELIVERY PAYMENTS	137,447	0	0	0	0	137,447

Ms. BROWN. You know, Mr. Jenne said, and this is my last remark, when he testified before us last month, that he thinks the government, the taxpayers, have received a real con game, and where I come from, this dog just don't hunt.

Maybe my other colleagues and other people understand this, but I do not.

Mr. MCDONNELL. We strongly disagree.

Ms. BROWN. I do not understand how we can continue to pay millions of dollars, billions of dollars and we don't have a finished product that works; that was on schedule. I just don't understand it.

And when the government stopped the payment, the black flag, then we went over the heads of that person and went to the top officials and was able to get reinstatement of the payments, but yet I don't know what the taxpayers have gotten in place of it.

Mr. MCDONNELL. The taxpayers have not paid for anything they have not received. As Mr. Swain indicated, under the development contract the taxpayers have not yet paid for the ceiling amount of that contract.

Ms. BROWN. OK, did they up-front money?

Mr. MCDONNELL. There is no up-front money. The taxpayer—the government does not pay except for work performed.

Ms. BROWN. Did you receive any dollars before the service was rendered based on the contractual agreement that you have performed certain things in order to get this money?

Mr. MCDONNELL. Not to my knowledge.

Mr. LANESE. There are progress payments on contracts.

Mr. SWAIN. We have never got up-front money.

Mr. LANESE. If you are a builder and you lay the foundation for a home, you get progress payments. You don't have a house, but that is part of the work. And, of course, we get progress payments for work performed.

Ms. BROWN. And what if you did not complete this progress payment in the timeframe? Did you get any money that you should not have gotten based on progress work? In other words, you do some work, you get a certain portion, you do some more, you get a certain portion. Was any of this out of line? Yes or no.

Mr. LANESE. To my mind all the funds we have ever received have been absolutely aboveboard and legal and proper and absolutely in every respect, no exceptions.

Mr. MCDONNELL. For work performed.

Mr. CONYERS. The Chair is now going to recognize our colleague for 5 minutes, the gentleman from California, Mr. Stephen Horn.

Mr. HORN. Thank you, Mr. Chairman. It seems to me the last dialog was very important for several reasons. No. 1, you obviously have a success or you could not have achieved all the world records you have with the plane. So it is clear it is a success. The Joint Chiefs of Staff have reaffirmed that, the Secretary of Defense has reaffirmed it, and in the submission of the budget, the President has reaffirmed it.

Let me ask you a couple of questions just to enlighten me. Is it possible that some items are questionable as to whether they belong in research and development or production as any project evolves? And, if so, could you give us an example of where one can

argue over the classification between what is research and development? Research is usually pretty clear, where it gets muddy, especially if you have to satisfy the customer, is the development in relation to production.

I would like to hear some thoughts on that.

Mr. McDONNELL. Yes, let me start and then pass it on—Dave would be the one. You are exactly right in terms of the difference between research and development versus production. There are certain funds it is very clear, research; other funds it is very clear it is production; there is a large gray area between as to where does research stop and where does production begin.

And, Dave, if you can give some examples.

Mr. SWAIN. In the area of engineering, it turns out to be the most complex. When you finish a design on your initial product and you start to build that product in the factory and you learn simultaneously how to improve building it and make giant design changes to that so the cost to our products will get lower as time goes on, we have the same people that do that and they may go back and forth from doing a task in 1 day that feels like development. They may do a task that is production related and may switch back and forth.

That represents a very small percentage of our business, but in those kinds of jobs, generally we develop an allocation system with our customer that is appropriate, but it is an estimate of where those charges would go. If we did not do that, we would have our engineers spending more time filling out time charges than doing creative engineering and that is not smart for any of us.

Mr. HORN. Let me move to another area since I only have 5 minutes.

I feel in a way that, Mr. McDonnell, you might have dragged your feet on appealing this and my colleagues are having difficulty because we work with the Federal Government where they are not concerned about losing $150 million a month. Having been a former chief executive myself, I would have picked up the phone probably at the end of the first month and started with the highest person I know and said, what kind of an operation are you running? We have done the work; where is the check?

I just wonder if you, in retrospect, have any feelings on that situation?

Mr. McDONNELL. As I indicated before, this is not an unusual occurrence in doing business with the U.S. Government, so we normally reserve until it really gets to be a very serious situation before we try to go to the chief officers of our customer to try and get it resolved.

Mr. HORN. And you went to one-third layer down in the Air Force. There is the Secretary, the Under Secretary and the Assistant Secretary, and I gather you tried to keep it within the bureaucratic framework of appeals within the administrative organization of the Air Force?

Mr. McDONNELL. I did. In addition to the Air Force, I did also go to the Deputy Secretary of Defense to inform him of the situation. But in working with the Assistant Secretary of the Air Force, which, as you say, is several layers down from the top.

Mr. HORN. C–5A was mentioned. Is it true or untrue the C–17 has already carried more cargo—in terms of the configuration—than the C–5A can carry?

Mr. SWAIN. I guess we are not sure, Mr. Horn.

Mr. HORN. I had heard it was about 160,000 pounds and you have already achieved that 160,000 pounds.

Mr. SWAIN. We have carried 160,000 pounds over 2,400 pounds in a real flight with a real airplane that has been delivered.

Mr. HORN. One last thing, and I leave it up to you the extent to which you want to answer it.

I was fascinated in the first hearing I participated in about the great rivet situation. And I happened to go back in the so-called district work period and a group of workers from Douglas Aircraft came in to see me, and one woman said she had heard that testimony and that she wanted to just get up and testify. She said, I was a riveter; they don't know what they are talking about.

Do you have any feeling on the great rivet controversy?

Mr. SWAIN. We are frustrated, but we think it is behind us. We have got a good airplane. It has cost us a lot of time and money to get it behind us, but we think it is behind us.

Mr. HORN. Am I under the wrong impression that the rivets were fine, the problem was the engineering analysis, and you have corrected that? It had nothing to do with the rivets?

Mr. SWAIN. Precisely, sir. The airplane was fine with the rivets. What we delivered was a good product. We found areas we could improve the quality in the process and, therefore, reduce the cost and we have taken those steps and we have reduced the cost of building the wings.

Mr. HORN. Very good.

Mr. CONYERS. Would the gentleman yield to Ms. Brown, who has a question?

Ms. BROWN. I have just one question. You made some statement about Congress was not concerned about losing $150 million a month——

Mr. HORN. I am saying there is a culture here different from running a private enterprise where you cannot just put it off to be funded somehow magically in a great $4 trillion deficit, you have to deal with it. And as I say, I am sort of amazed Mr. McDonnell didn't deal with it after the first 30 days.

But running a large organization, you do have a tendency to say, hey troops, try to resolve it at the bottom of the hierarchy and, eventually, it becomes such a sore point, you cannot subsidize the Federal Government. Federal Government cannot subsidize itself. Usually it does better than private industry.

Ms. BROWN. I want to agree with you 100 percent, but I also want to be sure that when we buy something, we are getting what we pay for.

Mr. HORN. That is why I mentioned the world records and the fact the plane does fly; has been a success.

Ms. BROWN. Just one followup. Based on all of the testimony that we have received here in the sworn testimonies, the plane has severe problems.

Mr. CONYERS. This is the most interesting colloquy I have ever heard, but we have to move on.

I infer from Mr. Horn, my dear colleague's remarks, that McDonnell Douglas sets an example that the government ought to follow, and if that is the implication of his remarks, I will review with him how many billions of dollars cost overrun they are and how many years they are out of sync in production.

The Chair is now pleased to recognize one of its senior members on the minority side who was a former subcommittee member here but still serves with great distinction on the full committee, Mr. Chris Shays of Connecticut.

Mr. SHAYS. Thank you, Mr. Chairman. I appreciate your allowing me to participate in these hearings.

Mr. McDonnell, the problem that we find ourselves in is that McDonnell Douglas has severe financial problems and the U.S. Government has a plane that does not do the job. And regretfully McDonnell Douglas spread itself too thinly in its commercial operations and its military operations and then asked the Federal Government to bail it out. We have the GAO and the SPIG both stating that the C–17 program should be suspended until further review.

Now, there may be a factor, military factor, that says we cannot do that, but I want to read you comments that were made by the inspector general that just totally defy the comments you have made and I want to preface my comment by saying to you that the U.S. Government spent $2.6 billion for the A–12 and we have six design packages. We did not get a plane, we spent $2.6 billion.

I would also like to point out to you that we have $1.3 billion still in dispute that is owed to the Federal Government. And the reason that payment of $1.3 billion was given to McDonnell Douglas was it needed to be bailed out but it could not come before the government and ask for a bailout because you could not mix military and commercial.

Now, I want your comments to what the inspector general says in a report of January 1993. It says: "The summary of results. The Air Force officials implemented a plan of action to provide financial assistance to the Douglas Aircraft Company, a part of McDonnell Douglas, during the period August through December 1990 to ensure the contractor continued performance on the C–17 program."

And then they go on and say, "the actions centered on meeting contractor cash-flow requirements without requiring the contractor to disclose the nature or extent of its financial difficulties as required by acquisition regulations for advanced or unusual payments. Expedited Government payments were made that exceeded appropriated amounts by $349 million. Financing provided also exceeded the fair value of undelivered work by an additional $92 million."

This totally flies in the face of your comments about we don't get paid until we deliver. You didn't deliver, you got paid, you have advanced payments and it seems to me you are depleting your funds. You have spread your resources so thinly that you jeopardized your company and you are jeopardizing the planes that you are providing the government.

I would like to know how you can reconcile what you say with impartial, in my judgment, impartial organizations like the inspector general and the GAO?

And I will just conclude and listen to your answer that I don't fully blame you. If the Air Force is going to let you get away with it, then I blame the Air Force. You wanted to make a plane, the Air Force wanted the plane, and you guys conspired and women conspired and the loser in this whole thing is the taxpayer, as I see it, as the GAO sees it, as the inspector general sees it, and as many members of this committee see it.

Mr. MCDONNELL. First of all, I strongly disagree in terms of any conspiracy. I also strongly disagree that McDonnell Douglas is a company with severe financial problems. As I indicated before, we are in strong financial shape now and we are getting stronger.

I further strongly disagree that the C–17 does not perform. It is a very fine airplane. As far as advanced and unusual progress payments, we never asked for advanced or unusual progress payments. We only asked for those payments that were due us under the contract.

Mr. SHAYS. I want to say you are under oath and I guess maybe it is a definition of how you define "advance payments," but under the A–12 were you not given advance payments?

Mr. MCDONNELL. On the C–17 we got no advance payments; on the A–12, I do not believe.

Mr. LANESE. I don't remember, Congressman, but I can go check if you are interested.

Mr. SHAYS. I am sorry, you are too bright a man. That $1.3 billion was not an advance payment.

Mr. LANESE. We got paid for work performed on the A–12, and just as on the C–17, there was nothing improper or illegal.

Mr. SHAYS. What did we get for the payment?

Mr. LANESE. We received progress payments for work done.

Mr. SHAYS. What did the Government get for the $2.6 billion it spent?

Mr. MCDONNELL. Under terms of the contract, the Government owes progress payments. We got paid——

Mr. SHAYS. What did we get? I want a quick answer to that. What did we get?

Mr. LANESE. You got tremendous design capability. Much have of that has been transferred. Some remains with the McDonnell Douglas and General Dynamics.

Mr. SHAYS. So for $2.6 billion we got paper.

Mr. LANESE. You got advanced design technology, which is not cheap.

Mr. SHAYS. See this book? This book is blacked out. It is an inspector general's report and, unfortunately, it is proprietary so we cannot have it disclosed because you did not want it disclosed.

The problem is we know in this committee the financial conditions of your company, but we cannot disclose it because it is proprietary. I feel like I get involved in a conspiracy. I see documents that tell me you have had financial problems and had to come to the government to get payments. That is a fact, isn't it?

Mr. LANESE. Sir, the comment on the conspiracy is really an outrageous comment. There has been absolutely no conspiracy with anyone at any time. We have been totally aboveboard and above the law.

Mr. SHAYS. Why do we black out this book? Why are there pages——

Mr. LANESE. I cannot comment on the book because I have not seen it. But during this period, McDonnell Douglas only wanted to be paid for the work it performed against its contract, its obligations. And we felt the government had an obligation to pay us.

I recognize there are disputes in this. I recognize there are differences of opinion. Reasonable people can have differences of opinion, but we believe we were proper in every respect.

Mr. MCDONNELL. I will also disagree with your characterization of the IG report as being objective and impartial. I consider the IG report to have been an advocacy report for a certain position.

Mr. SHAYS. Thank you, Mr. Chairman I appreciate the opportunity.

Mr. HORN. Mr. Chairman, could I ask a question? I have here——

Mr. CONYERS. Just a moment, you have not been allowed to ask the question yet.

Mr. HORN. I am asking you.

Mr. CONYERS. Well, you can ask me a question off the record. We have witnesses before us right now.

Now, let me refer you, sir, to United States Code Annotated, title XXXI, section 1301 in referring to the original question posed by the gentlelady from Florida—and let me further, since I presume that you had the ability to record these public hearings that occurred at an earlier date with reference to McDonnell Douglas, Mr. McCandless, our ranking subcommittee member, asked this question of Mr. Vander Schaaf, the inspector general on Wednesday, March 17, 1993.

It is my understanding that the contractual agreement between the Federal Government and the McDonnell Douglas Corp. does not differentiate between R&D and the amount of money necessary to produce the first test model; is that correct?

Mr. VANDER SCHAAF. That is not correct. The contract differentiates. However, the total dollar value of the contract in the end does not differentiate, but legal opinions have been rendered by the Air Force itself that there is still a requirement to segregate the R&D/NE, nonrecurring engineering, costs for this item from the acquisition and production costs that are involved.

And then Mr. Rau joins in. He says: "The contract does call for a separation, as Mr. Vander Schaaf stated, and that is done through various vehicles. The progress payment submitted by the contractor to the government must be separated by the type of costs incurred; in essence by appropriation."

Mr. MCCANDLESS. Then it is your position that to commingle these funds would be in violation of the contract as currently written?

Mr. VANDER SCHAAF. Yes. To spend those funds for other than they were appropriated, there are rules with respect to how you spend RDT&E funds and how you spend procurement funds.

Mr. MCCANDLESS. That is a point in your report that you make.

Mr. VANDER SCHAAF. They obviously understood those rules or they would not have gone back and done a retroactive accounting change where they, by definition, decided that we are going to use 90 percent drawing release as the point at which we switch from nonrecurring engineering to recurring. If I could go into this, that is so descriptive. They knew they could not simply say that this is one contract; we can use any kind of money we want. I could get into details of how they did that.

Mr. MCCANDLESS. The basic question has been answered. It is their contention that there is not a distinguishing difference between the two.

Mr. VANDER SCHAAF. That is flat wrong. Even the Air Force would not back that up.

It goes on. This is at page 59. I am sure you may have reviewed this matter, since these hearings are all public.

Do you have any comment?

Mr. MCDONNELL. My comment is, first of all, I am not a lawyer, I am not in a position to argue the fine points of the law at this point. We do have legal counsel who have advised us on this, and my belief would be that Mr. Vander Schaaf on that is not correct.

Mr. CONYERS. Do you know Mr. Jenne?

Mr. MCDONNELL. I do not personally know Mr. Jenne.

Mr. CONYERS. But you know of him?

Mr. MCDONNELL. Yes, I know of him.

Mr. CONYERS. A witness here who was in your employ.

Mr. MCDONNELL. Yes.

Mr. CONYERS. All right. In May or June in 1990, did you see the chart prepared by Mr. Jenne regarding the consensus estimate at completion?

Mr. LANESE. I am not sure what that is. Do you have a copy, sir?

Mr. MCDONNELL. Yes, may we see a copy of that?

Mr. LANESE. Yes, sir, that is quite a large copy.

Mr. CONYERS. Just to help you out a little bit.

Mr. LANESE. Can you turn it slightly, please? Thank you.

Mr. MCDONNELL. I am not aware that I saw that chart.

Mr. LANESE. And I believe that I probably did, Mr. Chairman.

Mr. CONYERS. Mr. Lanese saw the chart.

Mr. LANESE. I believe I probably did and it looks familiar to me but I cannot comment with accuracy. It looks familiar with charts I saw during that period of time.

Mr. CONYERS. Well, if you didn't see it and Mr. McDonnell didn't see it and Mr. Jenne worked for you, is there someone else that may have seen it and maybe not yourself?

Mr. LANESE. Well, again, I am not sure. Normally, if that were mine, I would have my initials on it and would have noted that I would have seen it. It looks like, if I may describe it to you, sir, it looks like a chart that looks at ranges of estimates on the C–17 for a period. The gentleman you are referring to was a person working with us at the time and he was one of many. In fact, one of hundreds that could have worked on such an estimate.

Mr. CONYERS. But he was the only one that testified before this committee.

Mr. LANESE. Yes, sir, I understand that.

Mr. CONYERS. So let's get down to business. You recall this chart?

Mr. LANESE. I believe so. I mean I am comfortable talking to it.

Mr. CONYERS. Do you need to examine it any more carefully than you have to make sure that this is a document that comes from your company records?

Mr. LANESE. I don't believe so.

Mr. CONYERS. Since this McDonnell Douglas chart shows a consensus figure that represents approximately a $1.5 billion overrun, why then did you state in the 1990 annual report to shareholders that the program would be at or near break even?

Mr. LANESE. Well, obviously, sir, we believed it would be at that point in time. If I may comment on this, to help explain it, because the inner workings of estimating at completion processes is a fairly involved one. I won't say it is complex, but it is involved. When you go through the estimating process the first thing you learn is what-

ever estimate you do is wrong. You are never right. That is why you never find one economist who has the same estimate.

So as a result what we try to do when we estimate is we look at ranges and try to develop the outer range of possibilities as well as the best case of possibilities and then evolve that into an expected value, what we really think we are going to do. In order to get to that expected value, we have very specific plans and actions we will take to support that.

I would say to you the estimate called the consensus, I really don't know what consensus means. But I remember the estimate of $8.2 billion at the bottom. That consensus may be a consensus of five people who had developed that at the time, but I am aware of the technique that Mr. Jenne talked about in his previous testimony, and, by the way, that technique that he used to get to an over $8 billion number was a direct extrapolation of the work that had been done to date.

If you look at the left side of that chart, the left side of the chart shows $3.5 billion were expended on roughly a $6.5 billion program ceiling. So we were just over half way complete and, hence, had a lot of work to go and, in fact, had a lot that we could do to change our performance.

The $8.2 number, if I can characterize the way Mr. Jenne estimated this in simple terms, if Michael Jordan missed the first four shots in a basketball game and you used Mr. Jenne's technique, his estimating technique would tell you that Michael Jordan would never make another shot in his career. That obviously is an asinine assumption.

What we try to do is, we would have taken those same four shots by Michael Jordan and looked at his past record and, in turn, looked at things he could do to improve the accuracy and would have predicted on that. That is what we did.

So even though I am aware of the testimony before this committee on behalf of Bill Jenne, I would totally discredit the estimating process he used as an accurate estimate of what we believe we were able to achieve on the program, sir.

Mr. CONYERS. Well, I don't blame you, really, because what this shows is you would have $1.790 billion in shortfall and because you would not submit an estimate at completion, you could not be paid by the contracting officers; is that not correct?

Mr. LANESE. Sir, we did submit an estimate at completion, and we were paid late and we were not paid fully, but we were paid later in 1990.

Mr. CONYERS. Well, yes, but that was after Mr. McDonnell weighed in.

Mr. LANESE. Sir, I think we would have been paid even if Mr. McDonnell would not have weighed in, to use your terms, because it was the right thing to do.

Mr. MCDONNELL. If I may——

Mr. CONYERS. I see. In other words, his visit to the highest officials in the Pentagon was just a pleasure trip and he was going to get the money anyway, the company was going to get the money anyway; is that what you are telling me?

Mr. Lanese, you are the one I am asking this question.

Mr. LANESE. Certainly. It obviously benefits us to have a senior executive of our company meet with senior executives in the Department of Defense. However, I would say to you I believe over time had that not occurred, our position was a correct position in my mind, and I think it would have been vindicated over time. His involvement decreased the amount of time that would have been required, sir.

Mr. CONYERS. Is it your assertion that this document provided us is inaccurate in some way?

Mr. LANESE. Sir, all estimates are inaccurate. All estimates by their very nature.

Mr. CONYERS. Well, is this document inaccurate in some way?

Mr. LANESE. Again, when I look at that, it looks like we have a number of ranges we are looking to develop on the C–17. Our final number, by the way, turned out to be about $6.5 billion. So I would say there is one number on there at that point in time that is a fairly inaccurate number and it is the one that you refer to as consensus.

Mr. MCDONNELL. If I may add, there are a number of things that, in that analysis done, were not taken into account. We were in the process of taking very strong management action to bring the overall cost level down on that program.

We were reducing overhead rates substantially. We were putting some of our best people from around McDonnell Douglas working on the difficult problems out there. We were offloading parts of the C–17 and other programs from Long Beach in order to allow them to better cope with the overall work they had.

So we were taking very strong actions that were not taken into account at all in that analysis.

Mr. CONYERS. This may not be as complex as you make it out to be, gentlemen. We are talking now about the development contract and here, back then, Mr. Jenne pointed out it would be about $8 billion to complete, and right now, today, the estimate at completion is $7.9 billion. That is not an awful lot of difference; is it?

Mr. LANESE. Sir, ours is $7.6 billion.

Mr. CONYERS. $7.6 billion; all right.

Mr. LANESE. What you need to do, sir, is look at what comprised his estimate. I mean I have had a chance to look at some parts of it since the testimony.

Mr. CONYERS. Yes.

Mr. LANESE. I believe he turned out to be very accurate on assembly hours. So if you look at the piece in his estimate on assembly hours, he was quite accurate in that.

Mr. CONYERS. I think he was pretty accurate on estimates at completion, don't you?

Mr. LANESE. Well, he was very inaccurate on overhead rates, very inaccurate on procurement.

Mr. CONYERS. Whoa. On estimate at completion, I thought he was pretty accurate; didn't you?

Mr. LANESE. His number still is substantially above the number we see being—today being 95 percent complete on the program. So I would say, no, he was very inaccurate. The number, obviously, has grown.

Mr. CONYERS. Well, let's talk about the numbers, then. The number that I have on his chart is $8.2 billion. Is that what you have over there?

Mr. LANESE. That is what I see there. I was informed that the original work he did was the $8.6 billion number; $8.640.

Mr. CONYERS. And this is a consensus; is it not?

Mr. LANESE. Sir, I don't know what consensus means.

Mr. CONYERS. You don't know what consensus means?

Mr. LANESE. It is not a consensus with me.

Mr. CONYERS. These are charts provided to your company that you are paying for—these are not government charts. These are the charts we got from people that worked for you, sir, and now you tell me you don't know what they mean?

Mr. LANESE. May I make a point to you, sir?

Mr. CONYERS. Let me ask you this. Do you know what "consensus" means?

Mr. LANESE. Certainly I do.

Mr. CONYERS. Well, of course you do.

Mr. LANESE. Certainly I do.

Mr. CONYERS. Well, that is what this says.

Mr. MCDONNELL. But we don't know what group was the consensus group. It certainly was not our normal estimating group.

Mr. CONYERS. If you want us to find out and determine that for you I would be happy to, but I mean to insinuate that there is something wrong with your consensus group if you don't know who they are. This is a task we would be willing to take on for you if you want to disown them at this point.

Mr. LANESE. Consensus is a misnomer in the way it is being used here today.

Mr. CONYERS. But is it accurate on the chart?

Mr. LANESE. I have no idea what "consensus" means on that chart. What I——

Mr. CONYERS. You are the one paying for these records and the work that the consensus group performed.

Mr. LANESE. Again, sir, I don't know what the consensus group is.

Mr. CONYERS. It is a little disingenuous to now separate yourself from your own work product, sir.

Mr. LANESE. Sir, we had one estimate. That estimate was a $6.5 billion estimate. That was the consensus estimate. Because that estimate took into play all of the things we were going to do on that program with the $3 billion that remained to be spent. It also took into effect the risk we perceived on the program.

This estimate and these estimates look to be points on a chart to me.

Mr. MCDONNELL. Furthermore, it is my understanding that that analysis got put together in less than 1 week.

Mr. CONYERS. Oh, well, at least you know how much time it took even though you don't know who did it.

Mr. LANESE. Sir, there are range estimates that occur all the time in companies like ours. It is very common to do that. And, again, we were looking——

Mr. CONYERS. I am trying to go along—I told you, Mr. McDonnell, on two different occasions, I am a very nice guy, and that I

have tried to cooperate with all the witnesses that come before me. And you have been a perfect gentleman and pleasant when you were in my company. Some of the things that some of your agents say when we are not together I could take issue with, but we are not trying to take the C–17 away from you. We are not trying to embarrass this company. You have a lot of good workers out there in California; some 17,000, or there were before you started some downsizing plans.

But the point is that we are not hostile people. We are part of the government here. We are trying to help you. The inspector general is not an enemy of McDonnell Douglas. The Department of Defense is not. And you may not believe this, but the Government Operations Committee, wants a cargo plane; we know that it is needed in our military airlift systems. We would like to get fair value for the money we pay. We have had some very serious problems that bring us here today.

Now, we put up documents and you don't know what "consensus" means, you don't know who did them, they are not good anymore, and so forth and so on. What we need is a good faith discussion about this matter so we can bring it to a close.

Do you know that there are people in the Armed Services Committee that are throwing up their hands about whether they will ever see a C–17 that will be worth its money? Do you know that?

And what we are trying to do is explain some of the discrepancies so that we can proceed with building or changing builders, or doing whatever is necessary. But this is not an indictment. We are not running a trial on you. We are your friends. We are your government. We are here to help you.

Mr. MCDONNELL. That is what your divisions say about a corporate office.

Mr. CONYERS. But when we get these kinds of responses, some of the members express irritation.

Mr. MCDONNELL. May I ask Mr. Lanese to outline what our overall estimating process is and how——

Mr. CONYERS. No, I am not even interested in going back to him anymore, after he has put down his own employee's document.

Mr. LANESE. He was not an employee, sir.

Mr. CONYERS. And distanced himself from it in a rather disingenuous way. Now you are going to ask me to have him explain it? Not today; OK? Maybe we will have Mr. Jenne come back and reexplain it.

Let me go to this question and anyone here at the table can field it.

Mr. Jenne's analysis showed that for you to break even on the development contract, you would have had—now don't get excited—to double the efficiency or accomplish each task in half the time it had taken so far. True or false?

Mr. LANESE. I have no idea about that at the time.

Mr. CONYERS. All right. Therefore, the idea of breaking even on the contract was patently not achievable. True or false?

Mr. LANESE. False.

Mr. CONYERS. OK, fine, thank you. History has proven that to be true. So why did you continue to report a breakeven through 1990 when this shows a $1.7 billion deficit?

Look at that. It is there.

Mr. LANESE. May I respond?

Mr. CONYERS. I would be delighted. That is why I am asking you the question.

Mr. LANESE. May I respond now?

Mr. CONYERS. Yes.

Mr. LANESE. OK, thank you. When you estimate what it is going to take to complete a large program like the C–17 was, you rely on a number of techniques. One of those techniques is to extrapolate performance at its current levels. And that is the way to provide a range to you and in essence that range says if I don't get any better this is what I can expect to do.

I would go back to my analogy of Michael Jordan. He misses the first four shots. I project that forward. He is not going to make a shot the entire basketball game. More importantly, he will not make another shot the rest of his career. That assumption and that analysis to me is invalid because it does not assume or does not take into effect the ability to improve performance.

In our case, when we do an estimate like this, we build in very defined performance development factors. Some of those we were able to meet and, frankly, Mr. Chairman, some we were not. In hindsight, we had $3 billion left to spend on the program. I had $3.5, 4 years to go. We felt we could affect a great deal of our performance over that period of time.

And, in fact, in many, many instances we did. But net—net the program has grown and, in hindsight, it is a higher number. But at that time what we did was completely proper.

Now, one other comment, if I may. For public reporting purposes, we recognized all along because it was a fixed price development program, by the very nature of that program and its definition, it was a high risk endeavor. And we said that. We said it early on.

Look, you need to understand this is our best estimate. We believe we can achieve this and, most importantly, we have specific plans in place of things that we will do to improve our performance. We will not perform at some of the extreme levels identified on this chart. And we took a number of those actions and history will show we have made some significant improvements.

But at the same time, in all our public documents we told the public that we are concerned about this and our shareholders we are very concerned, because it is a high risk program and by its very nature it carries a significant degree of financial exposure.

And if interested, sir, I could read from the comments in our 10–Q during that period of June 30, 1990, and then September 30, 1990, if that is of interest.

Mr. CONYERS. It is of great interest and I thank you for your response.

We are winding down now. I may need a commitment that if we need you to come back that you might reappear voluntarily. Would it be possible for us to extract that agreement in advance?

Mr. MCDONNELL. I am willing to return as needed.

Mr. CONYERS. That is very kind of you.

Now, Mr. McDonnell, recently health benefits for certain retirees of McDonnell Douglas were canceled. Could you explain what brought about that activity and can there be any assurance that

there will not be any further erosion of benefits for your retirees at your plants?

Mr. MCDONNELL. Yes, I would be pleased to respond to that because, in fact, what we have done in terms of retiree health benefits for many of our people is to terminate the company funded plan. However, at the same time, we have provided our retirees a supplement under their pension plan which they are able to use to buy comparable health insurance.

That funding that we have provided under the retiree pension plan will enable them to be able to buy comparable health insurance, basically the same coverage they had, through 1996, for a 4-year period.

We have not committed to provide retiree health coverage beyond 1996, however, we have indicated to our retirees that the company is committed to providing them access to affordable, quality health care.

We recognize that over the next 4 years health care in the United States is likely to change dramatically. By doing this, we leave ourselves the flexibility as to what form of health care that there can be for our retirees once the United States has in effect decided what sort of health care will be provided. But as I say, we have told our retirees that we are committed to providing them access to affordable, quality health care.

Mr. CONYERS. Well, I am glad to hear that. My United Automobile Worker friends are a little bit apprehensive that if what happened to the white collar workers goes on to those of the people in the plant that they could be in for some very difficult times in providing health care for their families. Because you and I have talked about this already, have we not, this health care crisis, not only among the corporations, the industrial corporations, but in the families of America all across the land.

We are trying to recognize the seriousness of the cost of health care in this country that continues to escalate not because of companies or the people that buy the policyholders, but because of the paperwork and red tape involved in the insurance companies processing so many different claims. And the major incident, the major reason that collective bargaining sessions and agreements so sour is over the health care package. That has been the experience that we have found.

And so I need you to look at that with great care, because we have the automobile industry in our area that in some ways has the same kind of problems that your workers have in your plants.

Mr. MCDONNELL. Absolutely. We feel a real responsibility to our retirees, and in effect by what we have done to date, we have in effect assured them through 1996 of having full health care coverage without any reductions like are happening elsewhere with others, that they would get the coverage that in effect our active employees have.

What we have not provided is a guarantee past 1996. But, as I say, we are committed to providing our retirees with access to affordable, quality health care.

Mr. CONYERS. Well, that is reassuring because we better come up with a plan long before 1996 in the country and in the Congress.

We are meeting with Mrs. Clinton's 400 people, trying to come up with something by May 1.

Mr. MCDONNELL. We are counting on you.

Mr. CONYERS. We will need to have you looking at that with us as we try to work toward this great social crisis, dilemma, that we are in now.

Mr. MCDONNELL. Good.

Mr. CONYERS. I recognize the gentleman from Oklahoma.

Mr. ENGLISH. Thank you very much, Mr. Chairman.

And, Mr. McDonnell, I will state, like the chairman, I am your friend, too. Among us friends I have got a couple of more questions left to touch on.

I would like to go back to the September period, if you recall, when we last had our exchange a couple of hours ago, with regard to this period in which you were meeting with Air Force officers, and, in fact, I believe that continued on into early October, in fact, October 2, 1990.

There were some meetings that took place, and your personal notes state that you were in Washington on the second and third, and I believe the notes state that you could be "available for whatever had to be done on progress payments."

During that period, did you receive any commitments from any Air Force officer or civilian official that there will be funds forthcoming with regard to this dispute with the contracting officer?

Mr. MCDONNELL. No, I did not.

Mr. ENGLISH. There was nothing stated whatsoever?

Mr. MCDONNELL. No commitment on the part of any government official or Air Force officer to me.

Mr. ENGLISH. It was my understanding during that period, a General Butchko, or the Assistant Secretary of the Air Force, Jack Welch, the two of them promised you $300 million by the end of October 1990. Are you saying that is incorrect?

Mr. MCDONNELL. That is incorrect.

Mr. ENGLISH. You received no such commitment?

Mr. MCDONNELL. No such commitment.

Mr. ENGLISH. I believe you also said in response to a question by Mr. Shays, I believe, or a response to a statement Mr. Shays has made, that you had never made any request for advanced payments on any of these contracts; is that correct?

Mr. MCDONNELL. I was referring to the C–17. I did submit a letter to, I believe it was the Deputy Assistant Secretary for Acquisition, in January 1991, requesting payments or advances beyond normal progress payments, up to $1 billion, on work that we had already performed but would be in excess of normal progress payments.

I did not ask it relative to any contract. That was relative to work that we were doing for the U.S. Government across many contracts.

Mr. ENGLISH. I hate to disagree with you, but we have got a copy of your letter here, January 24, 1991, and that just doesn't settle. It states in here that in specific programs, proposed for inclusion in the pool or designated pool for contracts are the F–15, the FA–18, the AV–8B aircraft, Apache helicopter, U.S. Air Force Delta rocket production, Tomahawk and Harpoon missile programs, C–

17—but you said it did not include specifics. You are getting specific programs in here.

So, in effect, the sequence, as I understand it, is back in July you have the contracting officer that finds that McDonnell Douglas has not lived up to the contract obligations that they have, cuts off the money. We get to September, the middle of September, you talk to an Assistant Secretary of the Air Force. Those discussions then go with the Air Force throughout the latter part of September up to October 2, in which you have not only discussions with officials from the Air Force, but also you have discussions with the Assistant Secretary of Defense. And during that period, this was with regard to progress payments, and progress payments were made shortly after those meetings took place.

But evidently progress payments were not sufficient to deal with the problems that McDonnell Douglas was having, and you go beyond the progress payments, beyond the request or the supposedly money that had been earned, and now go to advance payments of a billion dollars that are requested in January.

Is that a proper accounting of the sequence of events?

Mr. MCDONNELL. In January, because of our tight financial situation and wanting to make sure that we had enough funds from whatever sources, I made the request for the availability of advances from the U.S. Government over and above what would be progress payments that would normally be due of up to $1 billion.

In addition, what we were doing is going out to other banks and potential lenders to be able to increase our credit capability from them. We were also, as I indicated before, in the process of a major cost reduction program within the company.

And in addition, we were looking for whatever ways we could to increase receipts from our customers to make sure from all of those sources that we had enough funds that we would not get into a major financial situation.

Mr. ENGLISH. Aren't we a little bit beyond that? Aren't you already into that major financial situation at that particular point?

Because you are stating in your letter to the U.S. Government that this may be the only reasonable borrowing alternative available to McDonnell Douglas.

Now, that is a pretty desperate sounding statement, Mr. McDonnell.

I guess the point, what I am getting at with all of this is that the cutoff that took place in July is not just a routine disagreement with regard to the contracting officer. The contracting officer found that McDonnell Douglas was in fact not in compliance. He took his action exercising his responsibility as he saw it and cut off the funds.

And in September, recognizing the desperate financial situation that McDonnell Douglas was in, you saw fit to come to Washington to meet with Assistant Secretary of the Air Force, other Air Force officials, Assistant Secretary of Defense, to plead the case. Even recognizing, evidently, this didn't make much of an impression on you, because you can't remember any of the discussions during that period.

But the point I make is that if in fact that contracting officer was in error, as you contend, and you were able to convince the Air

Force officials of that, why did the Air Force not overrule the contracting officer and resume the payments as would normally have taken place?

Mr. MCDONNELL. First of all, I disagree with your characterization that we were in a desperate financial situation. We were trying to get paid what was due us under the C–17 contract.

And one of the reasons why I was involved is that we were tight financially, and I wanted to make sure that the U.S. Government did not continue to go on with us fully funding that program.

Mr. ENGLISH. The point—something happened, obviously, between July and January. For you to have to take this unusual step, you have never done this before, the company has never done this, where you have gone to the Federal Government and asked for $1 billion in advances, $1 billion in advances on contracts. Now, that is way out of the norm.

Mr. MCDONNELL. There were additional things.

Mr. ENGLISH. If I can finish the point that I am making, between July and January something happened. If that had not occurred by September or October, then it must have happened in November or December. Something blew up in there that caused big problems.

And the only conclusion that I can draw, Mr. McDonnell, is that this cutoff in July had such an impact—it was a sizable amount of money, I recognize that—had such an impact that McDonnell Douglas not only had to take this action, in effect overruling the contract officer, or the Air Force evidently felt they couldn't overrule him because they didn't overrule him, but turned around and found out a way to wire around, and that is what they have done, wire around the system, to provide funds to McDonnell Douglas. And even that wasn't enough.

And at that particular point, you ended up in January with having come to the Air Force and desperately plead to the Air Force for $1 billion in advances over contracts beyond what the contracts even called for, or what the contracts provided for in payments to the taxpayers' dollars.

Now, that is not some just small discrepancy or small problem in interpretation with regard to a few charts and projections. That is serious financial difficulty. And basically what the Department of Defense decided to do, beyond what their authority was, evidently they decided they had to take this desperate action in trying to make sure McDonnell Douglas did not succumb to these problems.

And, you know, I don't know, that may have been the right decision to do. The point is, the way it was done is absolutely wrong.

I recognize that McDonnell Douglas is very important to this country as a defense contractor. I understand that you produce quality equipment. And I certainly appreciate what McDonnell Douglas has stood for in its history. But the fact of the matter is that we also have a very serious responsibility to the taxpayers of this country. That is the reason these contracts are laid out in this manner. That is exactly what this committee is all about and what the Congress is all about.

And bottom line, what it comes down to is that the proper action had to be to come to the Congress and ask for specific assistance. This was done with regard to Lockheed, it was done with regard

to Chrysler and it should have been done with regard to McDonnell Douglas.

It was not up to the Department of Defense to simply fork out of their account and find a way to wire around the appropriations process in trying to provide funds to McDonnell Douglas. That was wrong.

Mr. MCDONNELL. I disagree with the way you have characterized it. In fact, we never received any money from that request that I made in January.

By the beginning of April, we withdrew the request because from other sources and our own internal actions we were able to satisfy our requirements. And, in fact, in the latter part of 1990, things did happen that increased the situation from September to the end of the year, namely what was happening in the outside lending world.

Mr. ENGLISH. Let me go back to that, Mr. McDonnell. The whole point is what was happening in September and October and what the Department of Defense was doing in November and December and into January, when you made the request.

Here is a copy of the letter to refresh your memory. That is not just a letter that was very casually sent to the Department of Defense saying you could milk it for another billion bucks. This was a desperate plea; the wording of that conveys that kind of impression. It is hard for us to draw any other conclusions.

Basically, what it comes to is that McDonnell Douglas is in deep trouble financially and it is pleading with the Air Force and the Department of Defense to help them out.

And as I said, the language in there, the only reasonable borrowing alternative available to McDonnell Douglas, the last hope, that is what the Federal Government was during this period, and I have got to say I am astounded that you cannot recall at least some of the conversations that you had with officials in the Air Force and the Department of Defense in September, late September and early October.

Mr. MCDONNELL. I have described those conversations to you. I have described what went on during that process. We never got any money from this. So clearly the Department of Defense was not the last resort.

Mr. ENGLISH. The Department of Defense evidently couldn't come up with it. Again, that raises questions in my mind.

I assume you have a pretty good handle on what is happening in your company. I assume you have got a good understanding of what the reality is. I assume when you wrote that letter, that you were not just out fooling around with the Department of Defense to see if you could milk them for a few bucks. If that is the case, that does raise questions in my mind, how did you get out of this mess?

You obviously were in severe difficulty in January. How you got out between January and the summer, that is another question. And I don't know. Maybe there is something we haven't discovered. Maybe there is some other wiring around that is taking place that we haven't uncovered yet.

But the fact of the matter is, as I said, I have a great deal of respect for McDonnell Douglas, I have a great deal of respect for

the products it produces, but what we cannot tolerate and agree to in these times of tight budgets and huge budget deficits is any kind of wiring around the system that is done by the Department of Defense on their own trying to assist a U.S. company.

Mr. CONYERS. The Chair recognizes Mr. McCandless.

Mr. MCCANDLESS. Thank you, Mr. Chairman.

I would like to submit for the record and ask unanimous consent to do so a consolidated financial statement of the McDonnell Douglas Corp. which reflects the first quarter of 1993, inasmuch as it has been the heart of our discussion.

Mr. CONYERS. Without objection, so ordered.

[The information follows:]

NEWS *From* **MCDONNELL DOUGLAS**

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FOR IMMEDIATE RELEASE

93-100

ST. LOUIS, April 21, 1993 -- McDonnell Douglas had record earnings for the first quarter despite an 11 percent decline in revenues caused by reduced defense spending and softness in the commercial aircraft market. Aerospace debt was reduced by 10 percent, or $287 million, during the quarter. The corporation's commercial aircraft business was profitable for the tenth consecutive quarter, and the C-17 military aircraft program was close to break-even for the first time in eight quarters. Other government programs at McDonnell Douglas were strongly profitable.

Net earnings for the quarter were $216 million, or $5.51 per share, including previously reported unusual gains totaling $122 million, or $3.10 per share, which came from the successful resolution of tax issues ($85 million or $2.17 per share) and from the sale of McDonnell Douglas Information Systems International ($37 million or 93 cents per share). Excluding unusual gains, McDonnell Douglas had net earnings of $94 million, or $2.41 per share -- the highest for any first quarter period. Earnings in 1992's first quarter, excluding both the cumulative effect of the initial application of SFAS No. 106, a new accounting standard, and discontinued operations, were $20 million, or 52 cents per share.

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"Our first quarter results reflect continued improvement in financial performance in the face of continued shrinkage in both government and commercial markets," John F. McDonnell, chairman and chief executive officer, said. "The great majority of our aerospace programs had good returns in the first quarter, and there were no major losses in any program. We reduced total aerospace debt by 10 percent during the quarter, and we expect to make further substantial reductions in indebtedness as the year progresses."

The military aircraft segment had first quarter operating earnings of $103 million, up from $24 million in the same period in 1992, when the segment's results were depressed by a $80 million write-off in the C-17 program. The C-17 program had a loss of about $1 million, compared with a loss of $101 million in the first quarter of 1992. Revenues for the segment were down, mainly as a result of reduced deliveries of F-15s to the U.S. Air Force. F-15 sales are scheduled to increase again in 1995 as a result of a large order from Saudi Arabia announced in 1992.

For the quarter, the missiles, space and electronic systems segment had operating earnings of $99 million -- its highest quarterly earnings ever -- compared with $44 million in 1992's first quarter. There were strongly improved earnings in each of the principal missiles programs and in the Delta launch vehicle program. Earnings in the Delta program were boosted by an incentive award from the Air Force for successful completion of a series of launches. Revenues for the segment were down, mainly as a result of the winding down of the Advanced Cruise Missile program, which was terminated in 1992.

The commercial aircraft segment had its tenth consecutive profitable quarter, with operating earnings of $14 million, compared with $30 million in 1992's first quarter, which included $23 million in

operating earnings recorded as a result of an advanced payment forfeited by a leasing company. Research and development costs were $46 million lower in 1993's first quarter, compared with 1992's, due to reduced spending on the MD-12 concept and lower MD-90 development costs. Revenues in the MD80/90 program fell by more than 60 percent as a result of reduced deliveries of twin jets. Nevertheless, the program achieved approximately the same operating earnings in 1993's first quarter as in the same period of 1992, due to improved margins. The trijet program, including spares, continued to operate at a small loss.

McDonnell Douglas delivered 11 twin jets (including two to customers under lease arrangements) in 1993's first quarter, compared with 26 in the first quarter of 1992. The corporation delivered nine MD-11 trijets in the quarter, compared with seven in the first quarter of 1992. During the quarter, nine twin jets and five trijets on firm orders were canceled.

On March 31, 1993, the MD-11 program included 85 deliveries, 83 aircraft on firm order, and 116 options and reserves representing potential future orders. On the same date, the MD80/90 program included 1,058 deliveries, 166 aircraft on firm order, and 210 options and reserves.

The financial services and other segment had first quarter earnings of $6 million, compared with $3 million in 1992's first quarter. Revenues were down, as a result of the disposition of a number of the finance subsidiary's operations in 1992.

Retiree health care costs associated with the new accounting standard (SFAS No. 106) were lower in the latest quarter than in 1992's first quarter, due to the elimination of company-paid health care for non-union retirees, announced in October of 1992. In the first quarter

of 1993, these costs reduced net earnings by approximately $15 million (operating earnings by $24 million). In the first quarter of 1992, they reduced net earnings by approximately $47 million (operating earnings by $75 million).

McDonnell Douglas reduced aerospace debt by 10 percent during the quarter -- from $2.767 billion on Dec. 31, 1992, to $2.480 billion on March 31, 1993. Proceeds from the sale of assets and improved cash flow from operations were used to reduce debt.

Interest expense for the aerospace segments in the first quarter of 1993 was $18 million, down from $74 million in 1992's first quarter. Almost the entire decrease is due to the reversal of interest accrued over the past few years on several issues that were successfully resolved with the Internal Revenue Service during the first quarter of 1993. Income taxes were also reduced in conjunction with the resolution of tax issues.

Firm backlog on March 31, 1993, was $22.351 billion, compared with $24.052 billion on Dec. 31, 1992 and $28.504 billion on March 31, 1992. Total backlog on March 31, 1993 was $38.761 billion, compared with $41.806 billion on Dec. 31, 1992 and $40.245 billion on March 31, 1992. The decline in backlog reflects deliveries, a softening of commercial aircraft orders worldwide, and canceled orders.

Total employment on March 31, 1993 was 78,258, compared with 87,377 on Dec. 31, 1992, a decline of 10 percent. Lower employment is due to the sale of two businesses, outsourcing of data processing services, lower production rates in a number of programs, and reductions in force aimed at achieving greater efficiencies.

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MCDONNELL DOUGLAS CORPORATION
CONSOLIDATED RESULTS OF OPERATIONS
(Millions of dollars,except share data)

	Three Months Ended March 31	
	1993	1992
	Unaudited	
STATEMENT OF OPERATIONS		
Revenues	$ 3,620	$ 4,061
Costs and expenses:		
Cost of products, services and rentals	3,115	3,587
General and administrative expenses	182	201
Research and development	72	132
Interest expense:		
Aerospace segments	18	74
Financial services and other segment	33	45
Total costs and expenses	3,420	4,039
Earnings From Continuing Operations Before Income Taxes and Cumulative Effect of Accounting Change	200	22
Income taxes	21	2
Earnings From Continuing Operations Before Cumulative Effect of Accounting Change	179	20
Earnings from discontinued operations, net of income taxes	37	4
Earnings Before Cumulative Effect of Accounting Change	216	24
Cumulative effect of initial application of new accounting standard for postretirement benefits	-	(1,536)
Net Earnings (Loss)	$ 216	$ (1,512)
Earnings (Loss) Per Share:		
Continuing operations	$ 4.58	$ .52
Discontinued operations	.93	.10
Cumulative effect of accounting change	-	(39.91)
	$ 5.51	$ (39.29)
Dividends Declared Per Share	$ .35	$ .35

Prior year amounts have been restated for discontinued operations and the adoption of Statement of Financial Accounting Standards No. 106, "Employers' Accounting for Postretirement Benefits Other Than Pensions".

MCDONNELL DOUGLAS CORPORATION
BUSINESS SEGMENT DATA
(Millions of dollars)

	Three Months Ended March 31	
	1993	1992
	Unaudited	
BUSINESS SEGMENT DATA		
Revenues		
Military aircraft	$ 1,660	$ 1,816
Commercial aircraft	1,249	1,450
Missiles, space and electronic systems	643	700
Financial services and other	66	94
Operating revenues	3,618	4,060
Non-operating income	3	3
Elimination of intersegment interest income	(1)	(2)
Total Revenues	$ 3,620	$ 4,061
Earnings		
Military aircraft	$ 103	$ 24
Commercial aircraft	14	30
Missiles, space and electronic systems	99	44
Financial services and other	6	3
Operating earnings from continuing operations	222	101
Discontinued operations, net of income taxes	37	4
Corporate and other	(3)	(3)
Interest expense	(18)	(74)
Elimination of intersegment interest income	(1)	(2)
Income taxes	(21)	(2)
Cumulative effect of accounting change	-	(1,536)
Net Earnings (Loss)	$ 216	$ (1,512)

Operating earnings of the financial services and other segment have been reduced by interest expense, an operating expense of that segment.

Prior year amounts have been restated for discontinued operations and the adoption of Statement of Financial Accounting Standards No. 106, "Employers' Accounting for Postretirement Benefits Other Than Pensions".

MCDONNELL DOUGLAS CORPORATION
CONSOLIDATED BALANCE SHEET
(Millions of dollars)

	March 31 1993	December 31 1992
	Unaudited	
ASSETS		
Cash and cash equivalents	$ 110	$ 82
Accounts receivable	624	604
Finance receivables and property on lease	2,146	2,262
Contracts in process and inventories	7,212	7,230
Property, plant and equipment	1,944	1,991
Other assets	1,540	1,612
TOTAL ASSETS	$ 13,576	$ 13,781
LIABILITIES AND SHAREHOLDERS' EQUITY		
Liabilities:		
Accounts payable and accrued expenses	$ 2,845	$ 3,018
Accrued retiree benefits	1,525	1,544
Income taxes	645	572
Advances and billings in excess of related costs	1,362	1,384
Notes payable and long-term debt:		
Aerospace segments	2,480	2,767
Financial services and other segment	1,472	1,474
	10,329	10,759
Shareholders' Equity	3,247	3,022
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	$ 13,576	$ 13,781

CAPITAL STRUCTURE
(Millions of dollars)

	March 31, 1993 Unaudited		
	Aerospace Segments	Financial Services and Other Segment	Total
Debt	$ 2,480	$ 1,472	$ 3,952
Equity	2,972	275	3,247
	$ 5,452	$ 1,747	$ 7,199
Debt-to-equity ratio	.83	5.35	

	December 31, 1992		
	Aerospace Segments	Financial Services and Other Segment	Total
Debt	$ 2,767	$ 1,474	$ 4,241
Equity	2,750	272	3,022
	$ 5,517	$ 1,746	$ 7,263
Debt-to-equity ratio	1.01	5.42	

Mr. CONYERS. Gentlemen, we thank you for your presence today and your cooperation. We appreciate the candor in which you have attempted to respond to the questions. Thank you very much.

The Chair now calls Russell Murray, former Assistant Secretary of Defense, here today by invitation of the ranking minority member, Mr. McCandless. He is a consultant for national security matters.

Mr. Murray has agreed to be administered the oath. Would you please stand and raise your right hand.

[Witness sworn.]

Mr. CONYERS. We have your prepared statement. We welcome you to today's hearings. We invite you to summarize your comments in any way that you choose, Mr. Murray.

STATEMENT OF RUSSELL MURRAY, FORMER ASSISTANT SECRETARY OF DEFENSE

Mr. MURRAY. Thank you, Mr. Chairman. I will do that as quickly as I can.

I have nothing to add on what the witnesses have said about the prosecution of the C–17 contract. But having been, so to speak, present at the creation of the C–17, perhaps I can shed some light on how it came to be, with particular emphasis on why the Air Force claimed that buying the C–17 instead of continuing with the C–5 would be the better choice.

In comparison with the C–17, the C–5 carries more, it goes farther, it had a lower sticker price, it had no development risk, it would have been available much sooner, and it didn't require a new logistic support system. In spite of that, the Air Force chose the C–17. They argued because it could operate on smaller air bases, and because it had newer technology that would result in lower operating costs and higher availability, it would save money.

I came to believe that the Air Force's conclusion was transparently wrong and that the choice of the C–17 instead of the C–5 was an error involving billions of dollars.

To understand why things have turned out as they have, some background might be useful. As you know, in addition to the big strategic airlifters such as the C–5 that move things intercontinental distances, there are smaller tactical airlifters such as the C–130 that move things around inside the combat theater.

In 1978, the Air Force's project, the AMST, for a new tactical airlifter was canceled on grounds of escalating costs and uncertain justification. That left a worried Air Force in the position of having no prospect of a new tactical airlifter.

Shortly after that, the Iranian revolution and the Soviet invasion of Afghanistan led President Carter to define continued access to oil in the Mideast as a vital national interests of the United States, that in turn, led to production funding for a national strategic airlifter, the so-called C–X.

Our plan for the C–X was to have the Air Force hold a competition for a new aircraft, and then pit the winner against the best of the existing airlifters, which was primarily but not exclusively the C–5.

But the Air Force did not want an existing design. They wanted a new design. Even though the C–X's purpose was strategic airlift,

I believe the Air Force saw in it a chance to resolve the tactical airlift issue that had been left hanging when the AMST was canceled. Their strategy was to design the smallest possible strategic airlifter that would just meet the C–X requirement for strategic airlift, and use it for the tactical missions as well.

The result was the C–17—a design that fell between two stools: Too small to be a strategic airlifter too big to be a good tactical airlifter.

To open its campaign, the Air Force asserted that for every airbase around the world with runways that could handle the C–5, there would be five that could handle their new C–X. And thus, the C–X could bring cargo closer to where it was needed.

That claim was outrageous. It was padded with places rich in bush-pilot backwoods strips such as in the jungles of Africa and South America where it was most unlikely that we would need a whole fleet of strategic airlifters. And even worse, it conveniently overlooked the fact that the 28-wheel landing gear on the C–5 lets it land without any runway at all.

We had many other questions about this so-called analysis, but before we had a chance to have them resolved, the incoming Reagan administration invited us to bid a fond farewell to the Pentagon, which we did.

To its credit, the Reagan administration did buy as an interim measure, 50 new C–5s. But they also decided to continue development of the C–X, which by then had become the C–17.

In its September 1983 the airlift master plan, the Air Force defended its choice of the C–17 instead of continuing with the C–5, claiming that it would save $16 billion over the next 30 years.

As I explain in my prepared statement, that analysis was hopelessly flawed. To save time now I would like to run through just one issue, the C–130's, to give you a flavor of the quality of that Air Force analysis.

They said that the C–17 would be able to move cargo directly from the United States to small overseas air bases close to where it was needed. But with the C–5, however, they said that because it couldn't get into those small air bases, it would have to land in large bases farther from the front. To get its cargo up to the bases that the C–17 could reach directly, they would have to transship it by C–130.

But, they went on, because so many of the older C–130's would have to be retired, they would have to buy 180 new C–130's as an integral part of any C–5 program. And on that slender thread hung the Air Force's entire claim that the C–17 would be cheaper than the C–5.

What was wrong with the Air Forces's assertion? Lots. First, we wouldn't have had to buy those C–130's. In a remarkable internal inconsistency, the airlift master plan itself said that no C–130's needed to be retired until 2006 or 2008, and then only 108 out of a fleet of over 500, with no further retirements until 2014.

Second, the C–130's couldn't do that job anyway. The C–5's most important cargo—because no other airlifter is big enough to carry—15 outsized items, such as an M–1 tank none of which will fit in the little C–130's.

Third, transshipment distances would be so short that trucks would be faster than C–130's. In Europe, the C–17's bases would be only about 40 miles closer to the front than the C–5's bases. Rather than take the time to load the C–5's cargo into C–130's, fly the few miles to the forward base and then to the front on the road, it would simply be faster to send the cargo directly from the main bases to the front by road.

Fourth, the assertion that the C–5 would be restricted to main operating bases in the first place because it needs long runways is wrong. The C–5 can carry two M–1 tanks. But if it carries only what the C–17 can carry, which is one M–1 tank, then it doesn't need any longer runway than the C–17. More important, the C–5's landing gear makes it free to operate without any runways at all, unlike the C–17.

So the Air Force's whole case that the C–17 would save money was based on a preposterous assertion that it would have to buy 180 new C–130's to replace 180 perfectly serviceable C–130's, to carry cargo that won't fit in C–130's, on a mission better suited for trucks, and to move cargo to bases that the C–5 could fly to in the first place.

Mr. CONYERS. How did all this happen? It is important for us to understand that you speak from the position of a former Assistant Secretary of Defense. And I congratulate my colleague for adding your name to our witness list and for making yourself available.

But I can't go on any further without finding out, well, couldn't they have hired you as a consultant or just called you up on the telephone and saved us a few billion bucks?

Mr. MURRAY. I was not aware of the airlift master plan until I became special counselor on the Armed Services Committee. And then I saw this plan, and as you can tell from my comments, I found it astonishing that that was allowed to get through the Pentagon. In my day, I hope that we would never have let this kind of alleged analysis get through and influence the spending of really billions and billions of dollars.

So all I can say, Mr. Chairman, is the standard answer, "Not on my watch." I did the best I could when I was here to persuade members of the Armed Services Committee. I had no trouble persuading Mr. Darden, who came from Marietta, GA, and actually I had persuaded Les Aspin and a few others.

But the majority of the Armed Services Committee was strongly in favor of the C–17 for reasons that you can judge.

Mr. CONYERS. I am not sure if former Chairman Aspin now retains the same view as Secretary of Defense Aspin.

Mr. MURRAY. I do not know whether he does or not. Perhaps he will read this testimony and be persuaded.

The Air Force's recourse to the C–130's was nothing more than a red herring to justify the C–17. Throwing out the C–130's but accepting everything else in their analysis flipped the conclusion.

Instead of saving $16 billion, the C–17 would cost a billion dollars more than the C–5. But there was no reason to accept the rest of the analysis.

I will just touch on some of the other failings, as I know it is getting late.

First, the Air Force gave the C–5, which was already in production, no credit for its much faster buildup in airlift capability. So you would have gotten something useful that the C–5 was charged for but not given credit for.

Second—this is a little more esoteric—the Air Force failed to use discounting to reflect the C–17's front loaded cash-flow profile that resulted from heavy initial R&D and startup costs, initiation fees which the C–5 had long since paid.

Third, the Air Force overstated the C–17's average payload by 7 percent and understated the C–5's by 12 percent. They also credited the C–17 with the hilarious utilization rate of 16 hours a day, something the Air Force itself couldn't have possibly believed.

Adjustments to those and a few other similar factors gave the C–5 a discounted cost advantage over the C–17 of more than 20 percent or, in undiscounted dollars, a 30-year saving of $16 billion. That is just what the Air Force claimed, but they claimed it for the wrong airplane.

I think the question is now, should we do what we should have done a dozen years ago: Cancel the C–17 and restart the C–5 line? I think there are two major issues involved here.

First, now that the cold war is over. Maybe we already have enough strategic airlift. But I doubt that. It was the Persian Gulf, not Europe, that was responsible for the C–X to begin with, and it seems to me that sort of scenario is the most likely one for the future, and possibly without as much luxury of time to deploy as we had in Desert Shield and Desert Storm.

Second, the C–17's performance and cost have deteriorated considerably since this analysis was done. But now we have paid for most of the R&D, I take it. And I do not know for sure what a new C–5 would cost.

My guess, though, is that the C–5, which still carries more and still goes further, and we know it works just fine, and it doesn't need either runways or a new logistic support system remains the better choice.

[The prepared statement of Mr. Murray follows:]

STATEMENT
Before
THE LEGISLATION AND NATIONAL SECURITY SUBCOMMITTEE
Of The
HOUSE COMMITTEE ON GOVERNMENT OPERATIONS
April 22, 1993

by

Russell Murray 2nd

THE ORIGIN OF THE C-17

INTRODUCTION

Mr. Chairman, Members of the Committee, I thank you for your invitation to appear before you today. You have already heard from witnesses better informed than I as to the prosecution of the C-17 contracts. But having been, so to speak, present at the creation, perhaps I can shed some light on how the C-17 came to be, with special emphasis on the Air Force's justification for its choice of the C-17 in preference to the C-5.

I will try to be fair and objective in my presentation. But I do not want to mislead you as to the very strong position I hold regarding this issue. After what I hope has been a reasonably thorough analysis, I have come to believe that the Air Force's choice of the C-17 instead of the C-5 was a major error.

Let me, at the outset, put the choice between the C-5 and the C-17 in the simplest terms:

> The C-5 carried more, went further, cost less, had zero development risk, would be available much sooner, and had a logistic support system already in place.
>
> The C-17, on the other hand, couldn't carry as much, couldn't fly as far, cost more, faced the usual risks of development (which have indeed come to pass), would slow the much-needed build-up of strategic lift capability (after 12 years, the first C-17 is yet to enter service), and would require a whole new logistic support system.

But the Air Force chose the C-17. Why?

Two reasons: They argued that the C-17 could use smaller airbases than the C-5, and that its newer technology would result in lower operating costs and higher daily utilization. The issue, then, is whether these advantages alleged for the C-17 were valid and, if they were, whether they could outweigh its formidable disadvantages in payload, range, initial cost, development risk, availability, and existing logistic support.

But before turning to that issue, some historical background is useful in understanding why the Air Force chose a design that has fallen between two

stools: too small to be a good strategic airlifter, and too big to be a good tactical airlifter.

BACKGROUND

The background has two important elements: the AMST; and the Enhanced Level.

The AMST

There are two major kinds of airlift aircraft: the big strategic (or intertheater) airlifters that move things, for example, between the United States and Europe; and the smaller tactical (intratheater) airlifters that move things, for example, from Belgium to Germany.

Back in the early '70s, the Air Force was concerned about their aging fleet of workhorse tactical airlifters -- Lockheed C-130s, a product of by-then 20-year-old technology. So they got busy on a replacement called the AMST, for Advanced Medium Short Take-Off and Landing Transport. They contracted for two prototypes of the Boeing C-14 and two prototypes of the competing McDonnell-Douglas C-15.

The four aircraft were built and flown, but the entire project was cancelled during the Carter administration on grounds of excessive cost and uncertain justification for a new tactical airlifter. That left a worried Air Force with a fleet of aging C-130s and no prospect for modernization in sight.

The Enhanced Level

The other element of background is the Enhanced Level. During the Carter Administration, Secretary Brown's Consolidated Guidance to the Services for the preparation of their annual program requests set up three alternative funding levels for the following five years. We called the one in the middle the Basic Level. Below that was the Decremented Level, with less initial funding and a slower growth rate; above it was the Enhanced Level, with more initial funding and a faster growth rate. The Services were asked to prepare their requests to conform to the Basic Level, but also cover what they would cut out to get down to the Decremented Level, and what they would add to get up to the Enhanced Level.

We did that for two reasons. One was so that we could show the President what he could buy with either a smaller or a larger Defense budget. The other was so that we could think about shifts of funding between the Services -- lowering the priority of less promising proposals in one Service and increasing the priority of more desirable proposals from another Service as a way of spending the same Defense dollars more effectively.

Quite understandably in that administration, the Services were dubious about ending up with enough funding for even the Basic Level, much less the Enhanced. So they didn't waste a lot of time worrying about how to make the Enhanced Level as tempting things as possible.

Thus, in spite of its higher price tag, the Enhanced Level didn't look all that much more appealing than the Basic Level. We in OSD were accordingly left with little to persuade the President that a bigger defense budget might buy something worth having.

To cope with that problem, I undertook an exercise that I called "Enhancing the Enhanced Level", which meant coming up with proposals to strip out some of the Services' less imaginative suggestions and substitute more attractive ways of spending any extra funding that we might get the President to approve.

Among those initiatives were two suggestions for enhancing what seemed to me then -- and still seems -- to be our capability most in need of help: strategic mobility. One of the suggestions was for a fleet of Maritime Prepositioning Ships; the other was for production funding for the C-X, an as-then undefined strategic airlift aircraft.

THE GO-AHEAD FOR THE C-X

It was not long after that that the President declared that continued Free World access to Persian Gulf oil supplies was a vital national interest of the United States. And with that statement and the creation of the Rapid Deployment Force, Maritime Prepositioning Ships and C-X production funding immediately moved from the Enhanced Level to the Basic.

The fastest way to implement the C-X initiative would simply have been to restart the C-5 production line. But before we did that, we wanted to see whether technological progress in the 15 years since the C-5 had been designed could give us a new design sufficiently superior to the C-5 to justify the delay, the development cost, and production starting back at the top of the learning curve.

Our plan was for the Air Force to hold a competition for a new aircraft, and then pit the winner of that competition against the winner of a competition to be held among existing aircraft. The principal existing aircraft we had in mind was obviously the C-5. But to be comprehensive, we also included the KC-10 and the Boeing 747 freighter, though with cargo doors so far off the ground, neither was likely to be competitive with the C-5 as a military airlifter.

THE AIR FORCE TAKES CHARGE

But even before the competition for the new aircraft was held, much less the winner compared with existing designs, the Air Force decided on its own to go for a new design. I believe that what lay behind that -- eventually successful -- attempt to bypass our planned two-stage competition was that even though the C-X had been justified as a strategic airlifter, the Air Force saw in it the chance to solve the tactical airlift problem that had been left hanging after the earlier cancellation of the AMST. The Air Force's scheme was to build the smallest possible aircraft that would just satisfy the strategic requirement, and then use it for tactical missions as well.

To put this in context, our current tactical airlifter, C-130s, weighs in at under 200,000 pounds fully loaded. The C-5 strategic airlifter weighs about 800,000 pounds (though the oldest strategic airlifter still operating, the C-141, weighs only about 350,000 pounds). The Air Force accordingly envisioned a C-X weighing roughly 400,000 pounds. That was on the lower edge of what could, with something like a straight face, be called an strategic airlifter, but arguably on the upper edge of what could still be called a tactical airlifter, even though it would be more than twice as heavy as the C-130.

(As an aside, the Air Force eventually had to admit that 400,000 pounds was much too small for a decent strategic lifter, and the C-17 now grosses another 75 tons more than that. I would argue that 550,000 pounds is still well below the optimum for an strategic airlifter, but outlandish for a tactical airlifter.)

One of the puzzling things about the C-17 has been why the Air Staff has supported it so staunchly when, in comparison with manned bombers and supersonic fighters, dowdy old cargo planes have traditionally been so close to the bottom of the Air Force's priority list. Though it is pure speculation on my part, I suspect that the Air Staff may have smiled on this hermaphrodite, neither-fish-nor-fowl, too-small-for-strategic, too-big-for-tactical airlifter on grounds that it might forestall having to fund <u>two</u> new airlifter programs, one tactical and the other strategic. Combining the two in a single project would have minimized the diversion of funds from things that the Air Force cares a lot more about than airborne eighteen-wheelers.

As for the C-17's hearty endorsement by both the Army and the Marine Corps, my speculation is that after so many years of pleading for more airlift, they are only too happy to endorse <u>any</u> help the Air Force would be willing to provide. Whether the United States Air Force chooses to spend its budget wisely on C-5s or to squander it on C-17s is of not the slightest concern either to the United States Army or the United States Marine Corps.

<u>The Great Bases and Runways Pitch</u>

At any rate, having decided to go straight for a brand-new 400,000-pounder rather than existing 800,000-pounders, the Air Force invaded Capitol Hill with a "dog and pony show" purportedly supporting their decision. Much of their case was based on the assertion that for every airbase around the world big enough for the C-5 there would be five big enough for their proposed C-X. Thus, with so many more fields to pick from, they asserted, the C-X would be able to land much closer to where its cargo was needed.

Their basis for that claim was that the C-X would need a runway only 3,000' long and 90' wide, while the C-5 would need a runway at least 5,000' long and all of 150' wide, plus turnoffs gentle enough to be negotiable by this huge aircraft, plus taxiways wide enough to accommodate its track, plus at least six acres of ramp space. Fields failing to meet any one of those criteria, the Air Force deemed, were unusable by the C-5.

I took strong exception to that analysis on two grounds. First, the 5:1 figure had been egregiously padded. And second, the runway requirements that

had been imposed on the C-5 were excessive, to say the least.

As to the padded 5:1 figure, instead of concentrating on the most likely places for major deployments of U.S. forces -- Europe, or the Middle East, for example -- the Air Force had simply made a worldwide survey of airfields without regard to potential military significance for the U.S. Thus regions with plenty of big fields and great military significance were weighted equally with regions with little other than small fields but little potential for major deployments -- the jungles of Africa and South America, for example.

For example, the Air Force calculated that for every field in South America big enough for the C-5, there were 19 big enough for the C-X. The underlying reason is that because there is a lot of jungle and not many roads down there, a prime means of getting around is by lightplane. Accordingly, people have cut a lot of small strips to get into out-of-the-way places.

But that had little or nothing to do with where we'd be likely to need a whole fleet of strategic airlifters. Central Europe or the Persian Gulf should have carried a lot more weight than the Amazon Basin of Brazil.

As for the Air Force's claimed differences in runway requirements, they conveniently overlooked the fact that the C-5 was specifically designed with a complex and expensive 28-wheel landing gear so that it didn't need <u>any runway at all</u>. The Air Force's position in 1980 -- that it was the C-X and not the C-5 that could get the cargo closer to where it was needed -- was in stark contrast to what they had maintained back in the '60s when they were pushing the new C-5. Then the Air Force's official Mission Statement said:

> "[The C-5's] short field takeoff and landing ability will enable [it] to operate into short (4,000-foot), semi-prepared airstrips" and "deploy combat forces directly from the CONUS and rear area marshalling points into objective areas, using airdrop or airland techniques at semi-prepared airstrips as far forward as the tactical situation requires."

While a fully loaded C-X might well have a shorter landing distance than a fully loaded C-5, if one really needs to land close to the front in time of war, the C-5 can do much better than the Air Force would have had us believe, and much better than the C-17, which has no off-runway capability.

When the Air Force insisted that the C-5 needed 5000' x 150' paved runways, gentle turnoffs, and wide taxiways, Deputy Secretary Graham Claytor ordered the Air Force in 1979 to test the C-5 operating on bare ground, which it did very successfully, meeting the original contract specification for operating on soil with a California Bearing Ratio of, as I recall, 9. In fact, the aircraft tugs bogged down before the C-5 did.

There is one scene from a videotape of that test down at Eglin Air Force Base in Florida that sticks in my memory. In the foreground, coming toward you over the sandy field of rough grass, is a jeep with a red light flashing on top. A hundred yards or so behind the jeep and towering over it is the colossal mass of a C-5, the image rippling in the heat waves, and growing steadily as it

taxies toward the camera. Not a routine, day-to-day operation, no doubt, but a most convincing demolition of the Air Force's 5:1 assertion, and certainly nothing you'd ever want to even think about with a C-17.

Aside from the question of which aircraft could get closer to the front, we had questions about whether you'd really want to use small fields so close to the battle:

- o We asked how much time it really would save in comparison with landing at larger bases farther back (more on this later).

- o We asked whether those small bases would be equipped to handle the cargo delivered by the C-X -- you'd hardly expect much in the way of facilities at any field whose longest runway was only 3000'.

- o And, even if they could handle the cargo, we asked whether you'd really want to scatter all that cargo around on many small fields instead of bringing it all more-or-less together to "marry up" with the troops before going off to battle.

- o And we questioned the vulnerability of large and unmaneuverable cargo aircraft coming so close to the front lines, as well as the vulnerability of the runways that the C-X had to have.

I never got satisfactory answers to those questions before being deposed by the incoming Reagan Administration. As you may recall, the McDonnell-Douglas candidate, based on their earlier C-15 AMST design, won the Air Force competition for a new aircraft and was awarded the designation C-17.

Interim Procurement

The issue was then clouded by a proposal from Lockheed to restart the C-5 production line with a slightly updated design -- the C-5B -- quickly and at bargain basement prices. The Administration -- to its great credit, in my opinion -- decided to buy 50 C-5Bs (and 44 KC-10 tankers) as an interim measure. But they would also continue development of the C-17. The situation was further confused by Boeing's efforts, helped along by Senator Jackson, to sell their 747 Freighter, of which a lonely three were bought over the Air Force's sensible objections.

The Congressionally Mandated Mobility Study

The Congress, skeptical over the Air Force's dog-and-pony-show touting the C-X, ordered the DoD to conduct a thorough study of strategic mobility "requirements" including not only airlift, but sealift and prepositioning as well. That study, known as the Congressionally Mandated Mobility Study, led to an airlift "requirement" to increase our aggregate strategic airlift capability from some 29 million ton-miles per day to 66 million. Actually, the study came up with, as I recall, four estimates, all higher than 66 million ton-miles per day. But that now-famous figure was chosen as a lesser and thus politically more realistic "requirement".

THE AIRLIFT MASTER PLAN

In September 1983, the Air Force issued its "Airlift Master Plan" to justify the C-17 program. In it they compared building up to the 66 million ton-miles per day capability with the C-17 as opposed to doing that by cancelling the C-17 and continuing with C-5B production.

- The C-17 alternative in the Airlift Master Plan:

  1) Developed and bought 210 new C-17s; and

  2) Retired the 180 oldest C-130s, with their tactical airlift mission being taken over by the new C-17s on a part-time basis.

- The C-5 alternative in the Airlift Master Plan:

  1) Canceled the C-17 and continued to buy new C-5Bs; and

  2) Again retired the 180 oldest C-130s, but in this case replaced them with 180 new C-130s on grounds that, unlike the C-17s, the C-5s would need those C-130s -- among other reasons -- to move their cargo from major bases in the rear to small bases nearer the front.

In both alternatives, the Air Force retired the 54 oldest C-141s, moved another 80 to the reserve components, and operated these and the remaining 100 in the active force at a reduced rate.

The Air Force claimed that the C-17 alternative would save 14,800 people and $16.1 billion over 30 years.

In my opinion, that analysis was hopelessly flawed. Its major failings were that:

- It violated the fundamental analytical principle of either comparing the capability of equal-cost alternatives or comparing the cost of equal-capability alternatives;

- It failed to discount the costs of alternatives with fundamentally different cash flow profiles;

- It failed to consider refitting the existing C-141 fleet for continued service;

- It assumed an unprecedentedly high utilization rate for the C-17;

- It understated payloads for the C-5 and overstated them for the C-17;

- It failed to analyze an alleged airbase crowding problem with the C-5 alternative; and

- The cost and manpower advantages it claimed for the C-17 alternative depended entirely on a groundless assertion that the C-5 alternative

would require procurement of 180 new C-130s.

The C-130 Issue

I'd like to cover that last point first as it alone, quite apart from any of the analysis' other failings, is enough to entirely refute the Airlift Master Plan's claim that the C-17 option would be less expensive than the C-5 option.

The Air Force "Concept of Operations" illustrated in Figure 1 showed the current strategic airlifters, including the C-5, flying from Main Operating Bases in the U.S. to Main Operating Bases (i.e., with long runways, etc.) overseas. Their cargo would be forwarded from there, either directly by road to the final destination or flown via C-130 or C-17 to a "Forward Operating Location", and thence by road to the final destination.

Cargo shipped by C-17 from the CONUS, however, would go directly to the "Forward Operating Locations", by-passing the overseas Main Operating Bases entirely, and obviating the need for the intermediate leg by road or C-130.

The Air Force had also claimed that, regardless of the decision on strategic airlifters, it would have to retire the 180 oldest C-130 tactical airlifters on grounds of old age. Since the C-5 alternative required the C-130s to move the C-5s' cargo to the "Forward Operating Locations", those 180 old C-130s would have to be replaced with new ones. But in the C-17 option, with the C-17s flying directly to the "Forward Operating Locations", there would be no need to replace the 180 old C-130s.

Accepting all the Air Force's assumptions and assertions, over the 30-year period from 1987 to 2016, the C-17 option would indeed be, as the Air Force claimed, less expensive than the C-5 option. My calculation showed the difference (in undiscounted constant FY86 dollars) to be $11.3 billion: $152.8 billion versus $164.0 billion.

But that C-17 advantage depended entirely on the assumptions about the C-130s. If you simply threw the C-130s out of the calculation, the C-17 option became $1.1 billion more expensive than the C-5: $124.6 billion versus $123.5 billion. So the C-130 issue was key to the Air Force's claim that the C-17 option was less expensive. So what was wrong with their assertions? In a nutshell:

- First, there wasn't any need to retire those 180 C-130s with either option, or to buy replacements with the C-5 option, for the next 20 years. In a remarkable internal inconsistency, Figure 2, taken directly from the Airlift Master Plan itself, showed that no C-130s needed to be retired until between 2002 and 2006, and then only 108 of them, with no further retirements needed until the year 2014.

- Second, the Air Force was implying that if they were allowed to go ahead with the C-17 now, they wouldn't ask for more new tactical airlifters in the future because their C-17s could take care of that mission. In my experience, promises of that kind are not likely to be

remembered or upheld after the parties to the promise have long since been replaced by new officials in the Pentagon.

- Third, as I've already mentioned, if operation into forward bases is so vital, the C-5 with its 28-wheel landing gear could do it at least as well -- if not a lot better -- than the C-17, which is restricted to runways.

- Fourth, C-130s are too small to carry any of the C-5's specialty: outsize cargo. So none of that could go by C-130s; all of it would have to go by road anyway. And if you load the C-5s with only the things that C-130s can carry, then outsize cargo can't go by air at all because the C-5 would be the only aircraft that could handle it.

- And fifth, even if the C-5 were restricted to main operating bases, it would almost certainly be faster to send its cargo by road directly to the FEBA (Forward Edge of the Battle Area) than to go through all the loading and unloading of C-130s for a flight that is too short to justify airlift.

I'd like to spend a bit more time on that last point. While flying is doubtless faster than driving, inserting this tactical airlift leg would also incur delays, first waiting at the main base for enough C-130s to show up, then loading all the cargo into the C-130s, and then unloading it all again at the forward base so that it could be loaded into trucks for the final drive to the front.

Whether the speed advantage that a C-130 has over a truck could make up for those delays depends on how far it would have to fly from the main operating bases to the forward bases. If that were far enough, then the C-130 could save enough time over the truck to make up for the time it would take to load and unload the C-130. But there would be some maximum distance at which it would just be quicker to load the trucks directly from the C-5 and skip the C-130 leg. What follows is the analysis I made of that issue.

Figure 3 is a map showing the West German airbases that the Air Force claimed were capable of handling 1) only C-17s, 2) C-17s and C-141s, and 3) C-17s, C-141s, and C-5s. The Air Force had told the GAO that the C-17's "forward operating locations may be over 60 miles behind the [FEBA] and should be fairly secure". I therefore drew that dark line down the center of the map at 60 n.mi. back from what I took to be at least the initial FEBA -- the West German border with East Germany and Czechoslovakia -- and assumed that the airbases west of that line would be the ones of interest.

I also overlaid nine arbitrary but roughly equally spaced points along the presumptive FEBA. Entering all the coordinates in my PC, I had it calculate the distance from each of those nine points to each of the 27 bases west of the 60 n.mi. line that the Air Force said were suitable for the C-5. I then picked out the bases closest to each of the nine arbitrary points on the FEBA, and averaged those nine distances. That gave me a figure that said, on the average, the closest C-5 base will be X miles from the FEBA.

I then repeated that process for the second-closest C-5 bases in case we needed two C-5 bases, and again for the third-closest in case we needed three, and so on, coming up with a figure that said, for example, if you need 6 bases to unload C-5s, on the average they'll all be within Y miles of the FEBA.

I then repeated the whole process, adding in the 8 other bases open to the C-141. And then repeated it for a final time, adding in the 53 other bases open -- according to the Air Force -- to only the C-17. The results are shown on Figure 4.

For example, the average distance from the FEBA to the nearest base is 68 n.mi. for either the C-17 or the C-141, and 77 n.mi. for the C-5. The nearest 10 bases lie within 101 n.mi. of the FEBA for the C-17, or within 153 n.mi. for the C-141, or within 173 n.mi. for the C-5.

In another analysis that I'll get to later, I had estimated that there would be an average of about 8 C-5s on the ground in the Air Force's C-5 option, and about 7 C-17s in the Air Force's C-17 option. Even assuming only one aircraft per base -- that is, one big C-5 at each big main base and one smaller C-17 at each smaller forward base -- the 8th C-5-capable base would be only 71 miles farther from the border than the 7th C-17-capable base (163 n.mi. vs 92 n.mi.). The difference in <u>average</u> distance would be only 41 n.mi. (121 n.mi. vs 80 n.mi.).

The notion, therefore, that standard practice with the C-5 would be to transship its cargo by C-130 to the C-17 base seems dubious at best. With the C-5 bases an average of only 41 n.mi. farther from the border than the C-17 bases, transshipment by C-130 would almost certainly be slower than direct shipment by road to the FEBA. Surely it would be faster to load the C-5s' cargo on trucks for a direct 121 n.mi. trip to the border than it would to load it first on C-130s, fly it to the C-17 base, unload it again, and then load it onto trucks for an 80 n.mi. trip to the border. The 41 n.mi. saving in road distance could hardly justify the extra loading, transit time, and unloading involved in the C-130 transshipment.

And, of course, this analysis accepted the highly contentious Air Force assertion that, even in time of deep crisis, the C-5 could not land at any of the 8 C-141 bases, not to mention the 61 C-17 bases.

But was that result a peculiarity of the European scenario? What about the Middle East? How far apart are the bases there? Figure 5 is a map showing the airfields in Iran suitable, the Air Force said, for 1) C-5s and C-17s and 2) C-17s only. Because the location of a FEBA would be so much more uncertain here than in Europe, my analysis for this area simply tabulated the distance from each C-17-only-capable base to the nearest C-5-capable base, which would presumably be the distance a C-130 would have to fly under the Air Force concept that all C-5 cargos would have to be transshipped by air to C-17 bases.

Figure 6 shows the results of that analysis. For example, there is a 50-50 probability that a C-17 base is no more than 57 n.mi. from a C-5 base, and a 9-out-of-10 chance that it is no more than 98 n.mi. away. With distances that short, again, the transshipment by C-130 would seem to be not only unnecessary,

but positively undesirable. And this was an extremely conservative analysis in that, by assuming that cargo would always have to be shipped from a C-5 base to a C-17-only base, it ignored all the cases where the C-5 base happened to be closer to the eventual destination than the C-17-only base.

Therefore, the contention that 180 C-130s would be needed for transshipment of C-5 cargos (but not C-17 cargos) was not borne out by analysis of the distances involved, either in West Germany or in Iran.

The Air Force's case for the C-17 seemed, therefore, to have been based on the assertion that if they were forced to continue with the C-5 instead of being allowed to start up the C-17, they would have to buy 180 new C-130s -- to replace 180 perfectly serviceable older C-130s -- so that they could carry cargo that won't fit in C-130s -- on a mission that's better suited for trucks, but that could have been done anyway by C-5s in the first place.

That assertion was critically important to the Air Force's justification for the C-17. Even if the rest of their analysis is accepted, but the C-130 issue is simply thrown out of the analysis on grounds of being a red herring, the results flip. The C-5, not the C-17, turns out to be the less expensive option.

Base Crowding

Another of the seven issues that I thought had biased the Air Force analysis in favor of the C-17 was the Air Force's assertion that, because of its immense size, the C-5 would crowd the available space at the main operating bases overseas.

Figure 7, which shows the size of the C-5 relative to that of the C-17 and other airlifters, lends some credence to that concern. But because the Air Force furnished no analysis to support its assertion, I made my own using data from the Air Force's Airlift Master Plan. It went as follows:

- On a standard 6,000-mile mission, each C-5 generates 171,000 ton-miles per day.
- That 171,000 ton-miles per day per C-5 divided by the 6000 miles yields 28.5 tons of cargo delivered per day per C-5.
- That 28.5 tons per day divided by the average C-5 load of 68.9 tons equals .414 complete C-5 missions per day.
- Those .414 missions per day per C-5 times the 266 C-5s in the Air Force's C-5 option equals 110 C-5 missions per day.
- Those 110 missions per day times an assumed 2 hours unloading time per mission equals 220 C-5 hours on the ground per day.
- Those 220 C-5 hours on the ground per day, divided by 24 hours per day yields the answer: an average of 9.2 C-5s on the ground at any one time.

If you then track through all the other types of aircraft in the C-5 option the same way, you come up with a total of 20 intertheater airlift aircraft on the ground at the Main Operating Bases at any given moment, on the average. If you do the same thing for the Air Force's C-17 option, you come up with a total of 22. Of these, 7 are C-17s. Presumably, these would be at Forward Operating Bases, leaving 15 other kinds of intertheater airlift aircraft at the Main Operating Bases.

So all that the C-17 option buys you is a grand total of 5 fewer C-5s at the Main Operating Bases. Considering the number of commercial aircraft normally at European airports in peacetime (whose activity could be greatly curtailed in time of war), a difference of 5 C-5s, even spread around the 27 C-5-capable fields in West Germany alone, would seem to be, if a problem at all, a very minor one.

As for the rest of the issues that biased the Air Force analysis, let me recap from the start. Reproducing the Airlift Master Plan analysis as closely as I could, I came up with the same conclusion that the Air Force had: the C-17 option would be less expensive than the C-5 option. My figures showed a difference of about $11 billion -- or 7.4% -- over the 30-year period from FY 1987 to FY 2016.

Included in those figures of course were the costs for the C-130s: over $40 billion in the C-5 option, but only $28 billion in the C-17 option. Eliminating those C-130 costs on grounds of being a red herring, as noted above, switched the results, giving the C-5 option an edge of about $1 billion, or about 1%.

Unequal Costs and Capabilities

The next problem was that the Airlift Master Plan failed to compare the C-5 option with the C-17 option on the basis of either equal cost or equal capability. The Airlift Master Plan had compared the cost of the two alternatives but had just ignored a significant difference in capability. While the C-17 option was -- according to the Air Force -- less expensive, it was also less capable. So instead of having a clear outcome, all you had was a "I-have-some-good-news-and-some-bad-news" situation.

Though both alternatives did eventually achieve the target of 66 million ton-miles per day as established by the Congressionally Mandated Mobility Study, the C-5 option did it much sooner than the C-17 option. The reason was that the existing C-5 production line was kept running at the then-current rate of one new C-5B per month, but the C-17 line couldn't even begin until the C-17 development was essentially finished. The net result was that the new C-17s did not equal the new C-5Bs in number until FY95 or in airlift capability until FY96. As a result, over the first 10 years, the C-5 option delivered 15% more airlift capability than the C-17 option, for which it was charged but given no credit in the Air Force analysis.

At least from an analytical point of view, there would be two obvious ways of straightening out that tangle: either equate the costs and compare the

resulting capability, or equate the capability and compare the resulting costs. Either would resolve the "good-news-bad-news" problem.

In the equal-cost case, the C-17 option would be left as is, and the C-5 option allocated the same year-by-year funding to see what airlift capability would result. Funds that would have been used for R&D on the new C-17 and its initial production high on the learning curve would alternatively be used to buy new C-5s already well down the learning curve, leading to an even earlier build-up in airlift capability.

In the alternative equal-capability case, since the C-17 program couldn't possibly be speeded up enough to match the C-5's build-up in airlift capability, C-5 production would instead be delayed to match the C-17's slower build-up in capability. That was the case I chose on grounds of meeting the DoD goal of 66 MTM/D by the year 2000 with either the C-5 or C-17 alternatives.

In actual practice, rather than doing that, one might well decide to keep the C-5 production line running at at least a minimal rate and benefit from the faster build-up in airlift capability. But for analytical purposes, it resolved the problem, and showed that the C-5 option would save a further $4.5 billion over the 30-year period.

Discounting

The next problem was that the Airlift Master Plan failed to discount the costs of alternatives that had fundamentally different cash flow profiles. For those unfamiliar with discounting, a brief explanation of the concept:

> If you owe me, say, a dollar, I would prefer that you pay me now rather than a year from now. If you pay me now, I can put the dollar in a savings account and, a year from now, have, say, $1.05 instead of only the dollar I would have if you don't pay me until then. Thus, quite apart from considerations of inflation, a dollar now is worth more than a dollar later. Discounting is a way to account for the time value of money. It quite properly weights costs in the near-term (such as R&D and procurement) more heavily than costs in the long-term (such as out-year operations).

The C-17 was heavily loaded with near-term costs -- all the R&D as well as the expense of initial production before the learning curve could bring down unit costs. On the other hand, the C-5 was more heavily loaded with long-term expenses, such as its higher operating cost. Thus, discounting was important in getting at an equitable comparison.

When the cash flow profiles for the two options were discounted at the OMB-standard rate of 10% per year, the C-5 option gained another 9 percentage points in the comparison with the C-17 -- no change in the undiscounted cost comparison of course, but a $6.6 billion saving in discounted costs over the 30 years.

The C-141 Issue

The next problem was the Air Force's rejection of a program to extend the life of the existing, if ancient, C-141 strategic airlifters. Instead, the Air Force plan retired 54 C-141s and operated the rest at a reduced rate with only 2 crews per aircraft instead of 4. The resulting loss in capability would be made up by buying new C-17s or C-5s.

Actually it was necessary neither to retire any C-141s nor to operate any at a reduced rate. Their service lives could have been extended at a nominal cost to 60,000 hours -- enough to carry them well into the 21st Century. Though they are far less efficient airlifters than the new C-17s would be, reworking and retaining the existing C-141s was a far better choice than buying new C-17s at roughly 50 times the cost to replace them.

Therefore, I ran a further variation in which all 264 C-141 airframes were reworked and then operated at the current rates with the current 4 crews per aircraft. I took the unit cost of the rework to be the figure cited by the CBO: $3.13 million. I also guessed that it would take 6 months to rework a C-141, during which time each aircraft undergoing modification would be withdrawn from the calculation of airlift capability.

This variation benefitted both the C-5 and the C-17 options. On an undiscounted basis, it cut the C-5 option's 30-year costs by about $5 billion and the C-17 option's by more than $4 billion. On a discounted basis, the results reversed, saving $2.8 billion for the C-5 option and $3.2 billion for the C-17.

With the C-141s picking up more of the load, the number of new C-5s required dropped from 195 at an average unit price of $103 million to only 133 at an average unit price of $108 million. The cut in production was even more dramatic in the case of the C-17, driving the quantity down from 215 aircraft to 145 and the average unit cost up from $145 million to $175 million.

Payloads and Utilization Rates

The final group of problems that I felt had biased the analysis in the Airlift Master Plan involved the average payloads and the utilization rates assumed for the C-5 and C-17.

In all the comparisons thus far, I had taken the average payload for the C-5 as 137,800 pounds, the figure assumed in the Airlift Master Plan, based on a maximum allowable ramp weight of 769,000 pounds. However, as demonstrated in flight tests conducted by Lockheed and the Military Airlift Command, the maximum allowable ramp weight had since risen from 769,000 to 840,000 pounds. That 71,000-pound increase should result in a 17,200-pound increase in average payload, raising it by 12% to 155,000 pounds, the figure I assumed for this final comparison.

On the other hand, as so often happens in aircraft development, the estimated weight and drag of the C-17 had risen, with the result that the average payload had dropped by 6%, or 6,000 pounds from 96,600 pounds to

30,600, which I also incorporated in this last comparison.

As for the utilization -- or "ute" -- rate, the Airlift Master Plan assumed that the C-5's rate would rise from 10.7 hours per day in 1987 to 12.5 by 1991. For a plan issued in 1983, I saw little reason why the C-5's "ute" rate could not reach 12.5 hours per day four years later in 1987, which I assumed to be the case in this final calculation.

As for the C-17's "ute" rate, the Airlift Master Plan had claimed 15.65 hours per day -- an absolutely unprecedented figure for any military airlifter, and a figure that would be considered extraordinary even in routine, scheduled, peacetime, civilian airline operations. From that figure, the Air Force had deducted all of 27 minutes per day to account for operations involved in pinch-hitting for the 180 C-130s that had been retired in their C-17 option. That left a net "ute" rate for strategic airlift of 15.2 hours per day per C-17 -- the figure I had accepted for all the comparisons I've covered thus far.

On the other hand, while I had accepted the figure for analytical purposes, I never believed it, and I doubt that the planners in the Military Airlift Command did either. While it wouldn't be surprising if the more modern C-17 did achieve a higher "ute" rate than the C-5, I seriously doubted that it could be as much as 22% higher. Even the 12.5 assumed for the C-5 (and the other strategic lifters) was very high; 15.2 would be unprecedented in military operations. So for this final comparison, I arbitrarily set the C-17 "ute" rate at 13.5 hours per day, deducting nothing for the C-130-type missions that I had already thrown out, and still allowing a healthy edge over the C-5, though that had yet to be demonstrated.

These changes actually reduced the discounted costs of the C-17 option by 0.6%. The reason was that the better performance of the existing C-5s in that option slightly more than offset the poorer performance of the new C-17s. But the changes naturally benefitted the C-5 option much more, in fact by almost 10%.

SUMMARY

Figure 8 shows the effects of all these comparisons on the 30-year costs of the C-5 option relative to those of the C-17 option.

- Starting at the upper left with all the assumptions of the Airlift Master Plan, the C-5 was about 7% more expensive than the C-17.
- Throwing out the whole C-130 issue as irrelevant switched the advantage to the C-5 by about 1%.
- Equalizing the build-up in airlift capability by slowing the production of new C-5s ran its advantage up to about 4%.
- Discounting the cash flow profile further increased the C-5's advantage to 13%.
- Retaining the C-141s helped the C-17 option as much as the C-5, and

thus didn't affect the C-5's 13% advantage.

- o The adjustments to the payload and "ute" rate of the C-5 and C-17 raised the C-5's cost advantage to 21% -- a 30-year saving of $10 billion in discounted costs, and $16 billion in undiscounted costs. All those costs are in constant dollars, with the effects of inflation removed.

OTHER STUDIES

Those results seemed to me to be overwhelming evidence that the Air Force's choice of the new C-17 over simply continuing with the C-5 was, at least on economic grounds, seriously wrong. However, I was not the only one to have a look at the Air Force analysis. In September 1986, the CBO came out with their own analysis, followed by one by the GAO six months later.

The CBO figured that the C-5 option would be about $3.7 billion less expensive than the C-17, but concluded that the choice "probably turns on the qualitative advantages of the C-17's new design versus the more rapid improvements in capability offered by the C-5/KC-10 approach."

The GAO said that "Assuming the C-17 comes close to meeting its cost and performance objectives and is used for routine direct delivery in wartime, it should provide overall advantages to the Air Force over the C-5, including [$17 billion] lower life-cycle costs."

But the fact that neither study shared my conclusion that the C-5 was the dominant choice is hardly surprising, for the following reasons:

1) Neither study contested the Air Force's assertion that the C-5 option should be charged for the procurement and operation of 180 brand-new C-130s. Neither questioned the age of the C-130s, or examined the likely distances involved in the Air Force's proposed C-130 transshipment of C-5 cargos, or considered whether it would save any time over shipping directly by road, or how the C-5's outsize cargo would be handled by C-130s, or considered the C-5's off-runway capability, etc., etc.

2) Neither study even attempted to equate either capabilities or costs before comparing alternatives.

3) The GAO did not discount their cost estimates. Instead, they simply followed the Air Force methodology, which just added up total investment costs and total 30-year operating costs, regardless of when the money would actually be spent, as if the entire R&D and production process were accomplished in an instant, and all aircraft then operated simultaneously for 30 years. Aside from the obvious artificiality and lack of realism, discounting -- a must when comparing alternatives with such different cash flow profiles -- is impossible with this crude method of treating costs.

The CBO did develop the year-by-year costs needed to consider

discounting, but then used a rate of only 2%, far less than the OMB standard of 10%.

4) Neither study seriously questioned the Air Force's assumptions regarding payloads or utilization rates, or assertions regarding airbase crowding.

In other words, neither study addressed what appeared to me to be the fundamental failings of the Air Force analysis. So their conclusions hardly came as any surprise. What surprised me was the apparent absence of the prudent skepticism that is as much the hallmark of good analysts as it is of good journalists.

EPILOGUE

In this matter, I am confident of only one thing: that the Air Force's original choice of the C-17 instead of the C-5 was a major error.

Whether what should have been done a dozen years ago should finally be done now -- cancel the C-17 and restart the C-5 line -- I can no longer be sure:

o First, I can't be sure how much strategic airlift capability we should have in this post-Cold-War era. Until our new National Security Policy is defined with some precision, I doubt that anybody can. But it could be that we already have enough intercontinental airlift and need neither the C-17 nor more C-5s.

My guess, however, is that we should continue to build our strategic airlift capability. A European war is much less likely, but President Carter's reason for the C-X project (and the Maritime Prepositioning Ships and the Rapid Deployment Force) was that we needed more capability in the Persian Gulf, not Europe.

While Desert Storm has greatly reduced the threat from Iraq's armed forces, we were extremely fortunate to have as much time as we did to deploy our forces over to the Gulf. It's not hard to imagine scenarios that wouldn't afford us that luxury in the future.

I have long felt that of all the criteria of military capability, the one we have been farthest from meeting is deployment capability. Though that weakness has received more attention recently, I think that it is still our greatest military deficiency.

o And second, I understand that the current estimates of the C-17's performance and cost are much worse than I assumed in my analyses five years ago. But I cannot tell whether that would make the C-5 an even more desirable alternative now because I have no idea what it would now cost and how long it would now take to restart the C-5 production line.

My guess, none the less, is that even after having invested so much in the C-17 project, the C-5 -- which still carries more, goes farther, works

fine, and doesn't need either runways or a new logistic support system -- still remains the better choice.

In summary, then, I don't know that we should build more airlift, but I think we should. And if we should, I don't know if the C-5 is still a better choice than the C-17, but I think it is.

LIST OF FIGURES

1 The Air Force "Concept of Operations" showing the current strategic airlifters, including the C-5, flying from Main Operating Bases in the U.S. to Main Operating Bases overseas, etc.

2 C-130 retirement plot taken from the Airlift Master Plan.

3 Map of West German airbases.

4 Results for West Germany

5 Map of Iranian airbases.

6 Results for Iran.

7 Overhead view of 5 airlift aircraft.

8 30-Year costs of C-5 relative to C-17.

FIGURE 1
Airlift Concept of Operations

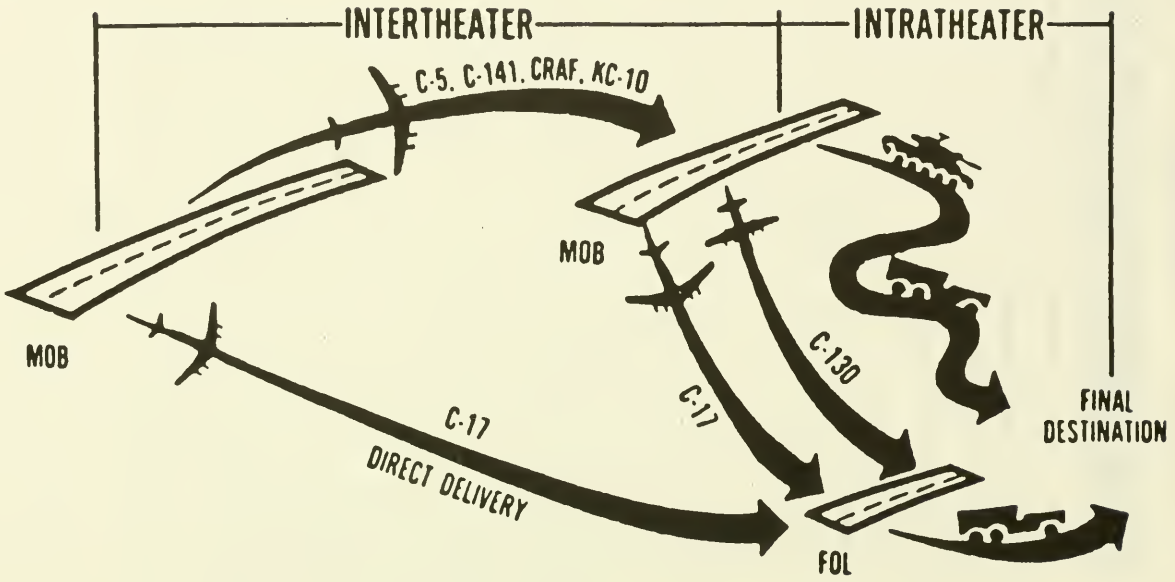


FIGURE 2

Projected Service Lives: Intratheater Aircraft

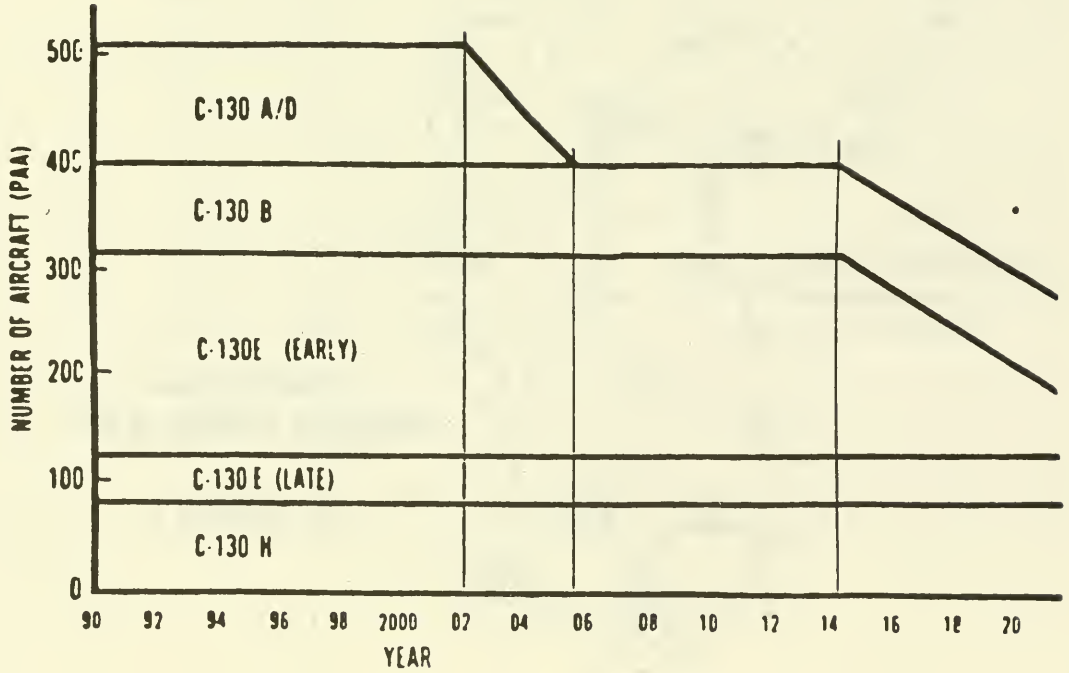


FIGURE 3

WEST GERMAN AIRFIELDS
(3000 Feet or Greater)

FIGURE 4

NUMBER OF BASES VS DISTANCE FROM FEBA

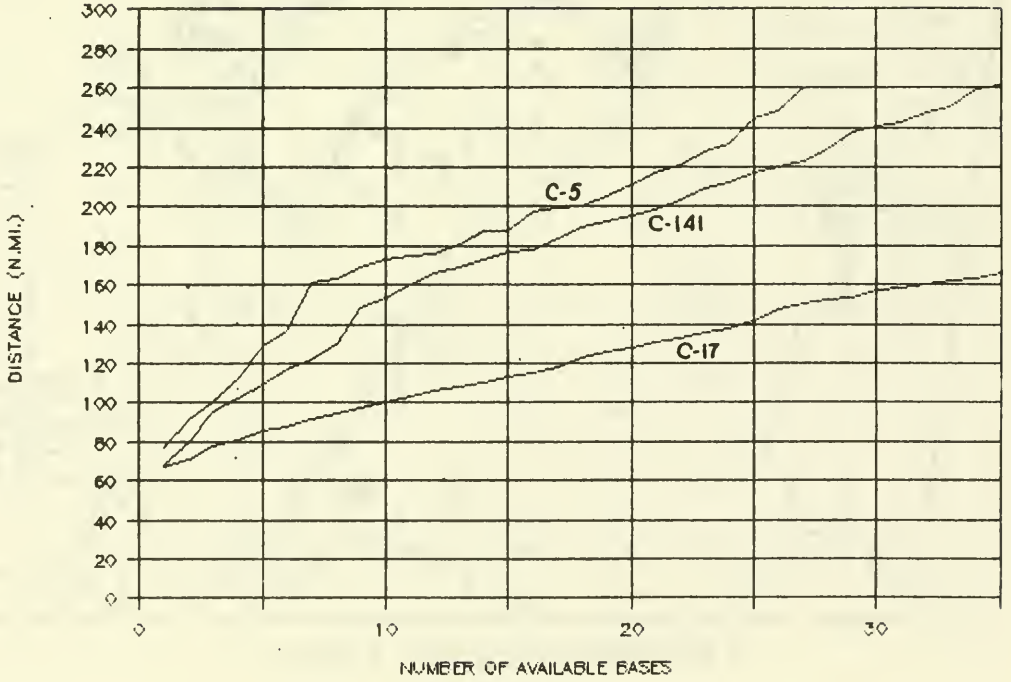


FIGURE 5
MIDDLE EASTERN AIRBASES

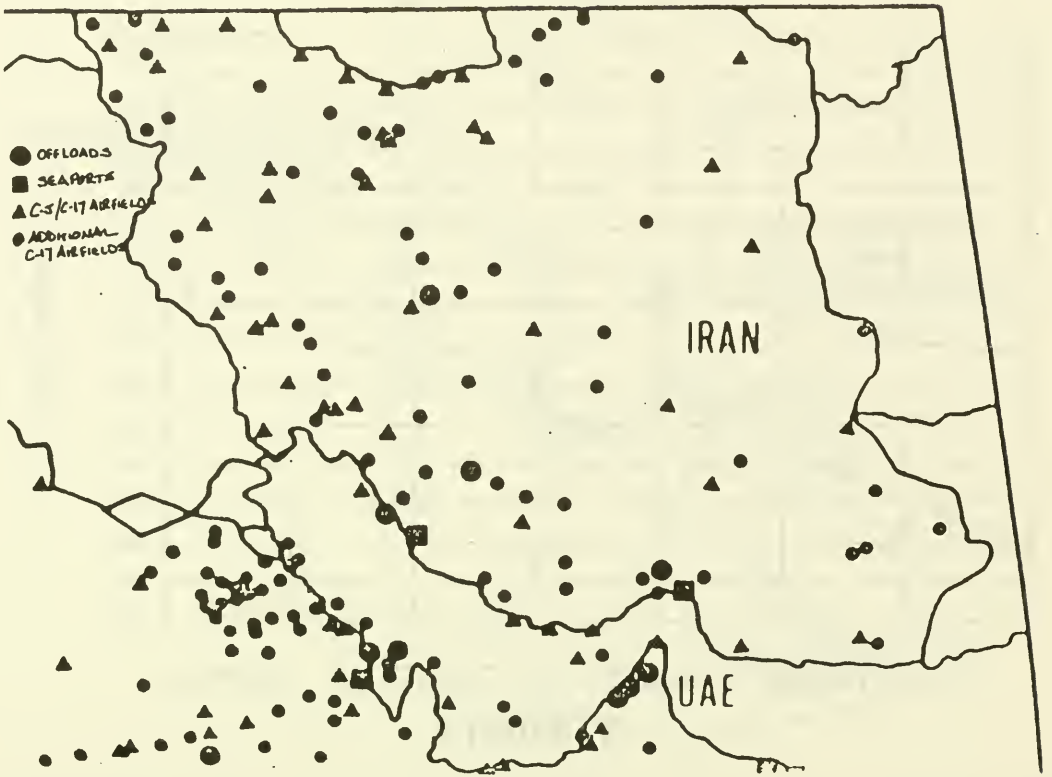


FIGURE 6

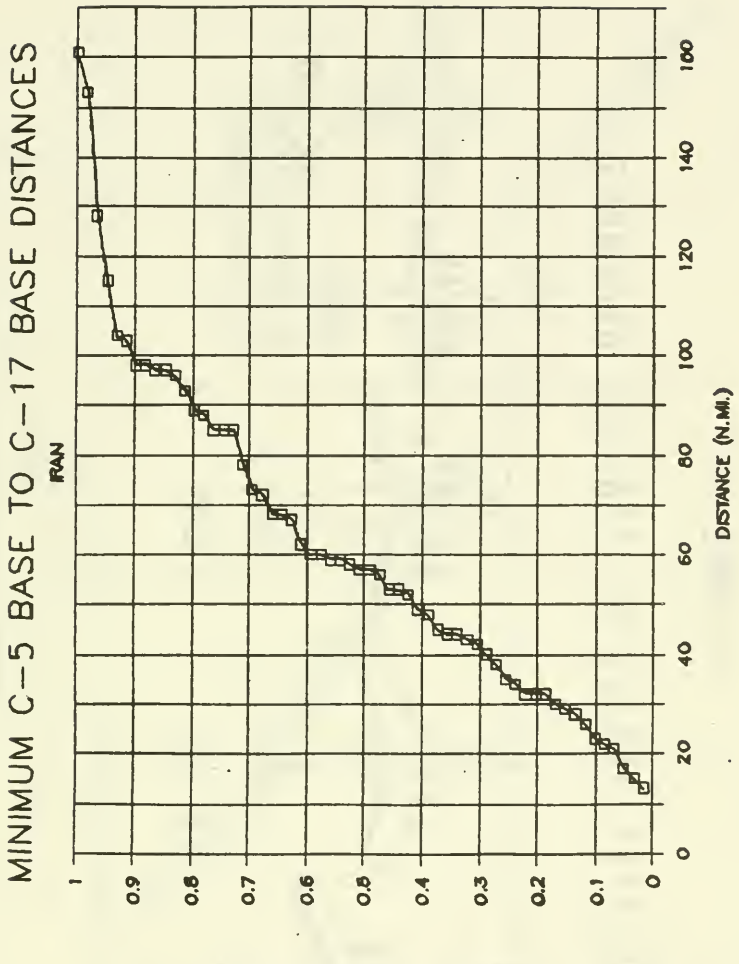

MINIMUM C-5 BASE TO C-17 BASE DISTANCES
RAN
FRACTION OF TOTAL C-17 BASES
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
20
40
60
80
100
120
140
160
DISTANCE (N.MI.)

FIGURE 7

RELATIVE SIZES OF AIRLIFT AIRCRAFT

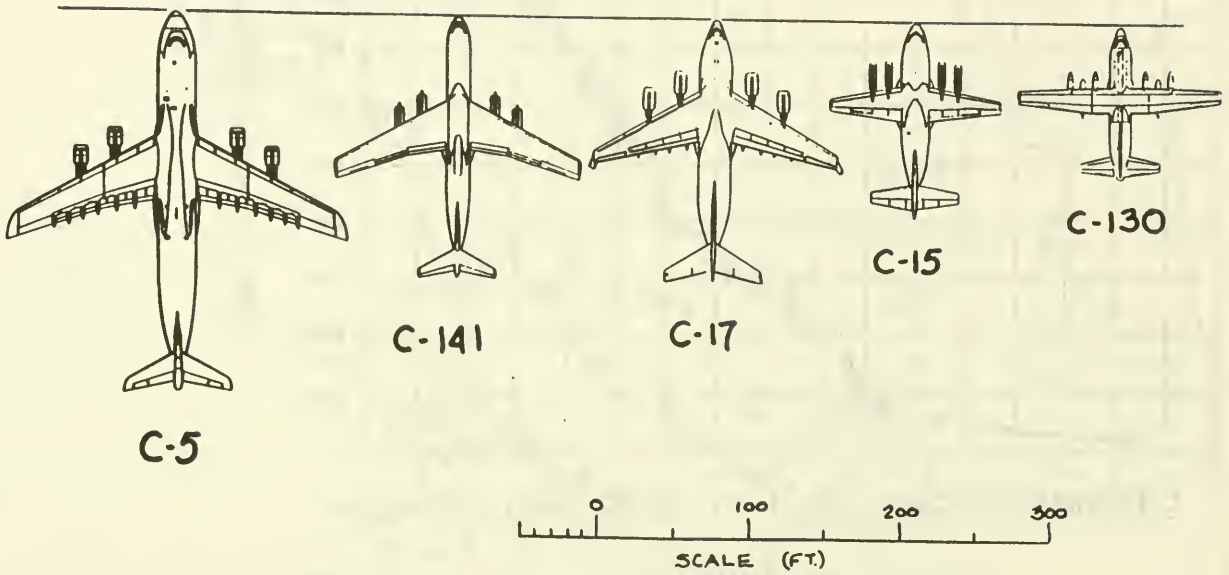
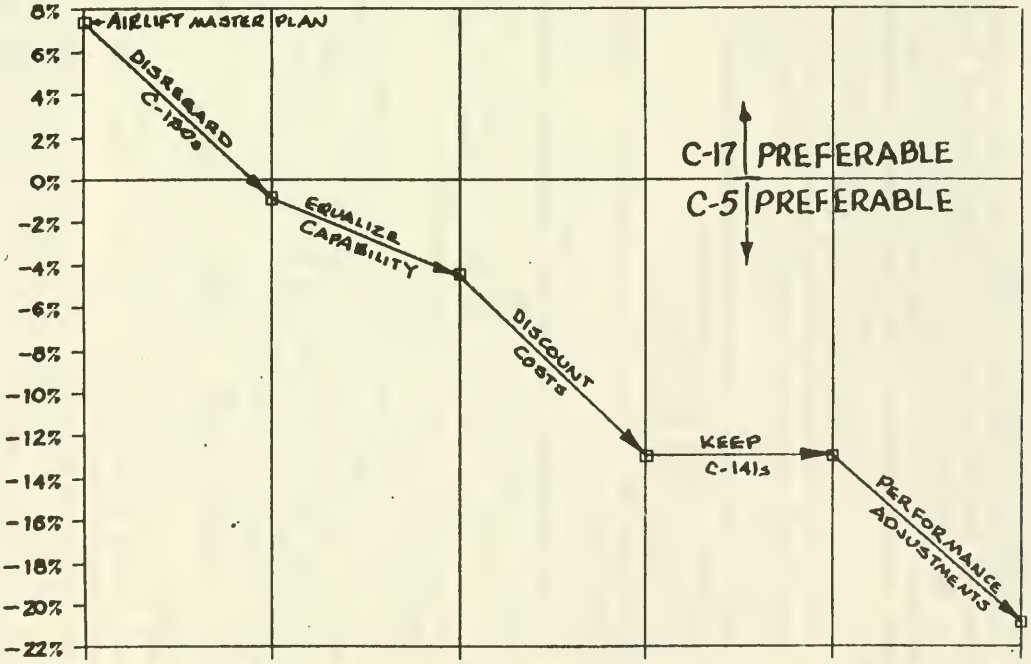


FIGURE 8

OPTION COSTS, C–5 RELATIVE TO C–17

FY87 – FY16



Mr. CONYERS. Is this goodbye McDonnell Douglas? What is the scenario here? What are we to do?

Mr. MURRAY. That is a matter of some concern to me, too. McDonnell Douglas is obviously a very important aircraft manufacturer. But understand, what I have said here is really based on problems with the Air Force, not with McDonnell Douglas. All these conclusions that I drew had nothing to do with whether McDonnell would be successful in prosecuting the contract. You have heard a great deal about that, and really I am not an expert on that having not been in that business.

I don't know what would happen to McDonnell Douglas if you canceled the C–17, or what would happen to Lockheed if you restarted the C–5 line. I am sure, though, that it would be beneficial to Lockheed and all its subcontractors.

Mr. CONYERS. Mr. McCandless.

Mr. MCCANDLESS. Thank you.

Thank you, Mr. Murray, for your patience, being the last on the train coming in.

Mr. MURRAY. That way there is no rebuttal.

Mr. MCCANDLESS. Your testimony essentially compares the C–17 with the C–5 and concludes the C–5 was even in the beginning a better bang for the buck. However, there are other air frames out there, for example, the K C–10 being operated, which is a DC–10, and also the 747, which is being used for purposes of freight.

How do they fit in the mission?

Mr. MURRAY. When we said compare the results of the competition for a new design with existing airlifters, in addition to the C–5 we also considered the KC–10 and the 747 freighter. The problem with those two aircraft, the 747 freighter and the KC–10, is that their fuselage floors are very high off the ground. That is satisfactory for commercial use where you can use a forklift to lift up the pallets and whatnot, and slip them in through the door on the side of the aircraft. And the 747 freighter incidentally is a wonderful airplane.

We were astonished when Boeing commercial came in and talked about giving us 20,000 hour warranties. The Defense Department never heard of anything like that.

But loading a tank onto a 747 freighter is a very difficult job. They did have a proposal for a nose door, and then raising the flight deck up so that the lower part of the flight deck wouldn't block access to the after part of the fuselage. But you have got a 60-ton tank you have got to lift 15 feet in the air.

Mr. MCCANDLESS. The two configurations under discussion, the height and accessibility to the airframe was the detrimental aircraft?

Mr. MURRAY. That is correct. Not very good as military airlifters.

Mr. MCCANDLESS. Would you describe why combining the strategic and tactical airlifter was a bad idea from the start?

Mr. MURRAY. The sizes are incompatible. The C–130 is a reasonably good tactical airlifter. It has been with us for years and years. Its maximum weight is about 175,000 pounds. The C–5's maximum gross is over 800,000 pounds. It is a much, much larger aircraft.

If you want efficiency, the big aircraft is what you want. If you want to fly emergency shipments of supplies and spares around in-

side a theater, you want a smaller aircraft. It would be wasteful to have such a great aircraft tooling around inside a small theater.

Mr. MCCANDLESS. Your statement asserts that the landing gear differences between the C–17 and the C–5 make the C–5 a better plane for forward-based operations. Could you explain why?

Mr. MURRAY. Yes, the original specifications for the C–5 demanded that it operate on very soft terrain. The solution was a 28-wheel landing gear, a very complicated landing gear.

When the gear comes down out of the aircraft into the down position, the wheels on the outside extend sidewards to be able to distribute the load over the ground. That buys you a lot in ability to operate in soft terrain.

The Air Force claimed that was not true, it could not do that, and that it had never been tested. Deputy Secretary Graham Claytor said, "Let's go test it," so they tested the C–5 in a number of places. It proved able to operate on sand and barely prepared land and actually was able to move in places that aircraft tugs were not able to move. That also makes you less subject to runway vulnerabilities and that sort of thing.

Mr. MCCANDLESS. It seemed your analysis was based on the assumption that our target fields will be in Europe and the Middle East.

Mr. MURRAY. Yes. Primarily the Middle East.

Mr. MCCANDLESS. If, for example, you were to need a plane to land in one of those former Soviet Republics or even Southeast Asia, would that change your assumptions to support the Air Force justification?

Mr. MURRAY. I don't believe so, because I firmly believe that essentially the C–5 can land any place the C–17 can. If you use comparable payloads, the landing and takeoff distances are also comparable.

Mr. MCCANDLESS. I have a number of other questions, Mr. Chairman, but in the interests of time I will yield back.

Mr. MCCANDLESS. May I submit questions to you, Mr. Murray?

Mr. MURRAY. Sure.

Mr. MCCANDLESS. All right.

Mr. CONYERS. Mr. Clinger.

Mr. CLINGER. Thank you very much, Mr. Chairman.

Thank you for coming to the committee today.

Had your analysis been accepted back when, we might not have had to go through the entire series of hearings we have held and will continue to hold on this issue down the road. So I just regret the fact that your analysis was not in fact taken advantage of at a time when it could have been very helpful to it.

Just one question. Do you know what the current status might be of C–5 tooling and whether we would have the capability or the possibility to restart a C–5 production line? Is that something you would be aware of at all?

Mr. MURRAY. I am not aware in any authoritative way. Last Tuesday I was handed a copy of a piece that Lockheed had prepared for the Armed Services Committee that had extensive analyses in it with cost. They said the tooling is available. They said it would take 38 months, I believe, to deliver the first new C–5.

Whether all those numbers in there are right or not, I couldn't possibly tell you. I have no way of checking them.

It is my impression that Lockheed now, surprisingly enough, has been going on the warpath for the C–5.

At the time that I first came over here, I think it is fair to say that Lockheed had been given the word from the U.S. Air Force that any attempt on the part of Lockheed to influence the C–17 program would be met with some considerable disfavor. Therefore, I was told by Lockheed people that they would answer questions that I asked them directly, but they had no ability to volunteer anything.

I had a number of—at their request—private meetings in Washington restaurants where pieces of paper would be slipped to me by Lockheed employees, unbeknownst to their superiors, dealing with things such as the program to extend the life of the C–141's and whatnot, which the Air Force had claimed was impossible, shouldn't be done.

But it seems now, judging from the fact that this brochure or this collection of slides has been issued by Lockheed, that the name of the game has changed and Lockheed is now willing to talk about the C–5. And if you are interested in what they could do, I suggest you ask them and find somebody that is a good referee; listen to them.

Mr. CLINGER. One thing we know about the C–5 is that it does work.

Mr. MURRAY. It does indeed. Although remember, the C–5 had its problems, too. One of the first problems it had, one of the wheels on its wonderful 28-wheel landing gear during a VIP demonstration dropped off and ran down the runway, to the intense embarrassment of Lockheed. The wings all had to be rewinged because of fatigue.

Who gained from that was Lockheed themselves. They got the contract to rewing the airplane. That is all behind us.

The C–5B apparently works a lot better than the C–5A. When you listen to comparison, make sure you know what kind of C–5 "A" or "B" they are talking about.

Mr. CLINGER. Thank you.

Mr. CONYERS. Thank you.

So haven't I seen you at Duke Zeibert's?

Mr. MURRAY. Not recently, sir, but I would be glad——

Mr. CONYERS. Well, we will discuss whether you would be willing to consult with the Government Operations Committee, since you have given so much good time to the Armed Services Committee.

Mr. MURRAY. I would be glad to consult on a part-time basis, yes, sir.

Mr. CONYERS. Thank you very much.

Mr. Shays? No questions?

Former Assistant Secretary of Defense, Mr. Murray, thank you very much. You have helped round this out in a very important way.

Mr. MURRAY. My pleasure, Mr. Chairman. Thank you.

Mr. CONYERS. The subcommittee stands adjourned.

[Whereupon, at 2:35 p.m., the subcommittee adjourned, to reconvene subject to the call of the Chair.]

APPENDIX

MATERIAL SUBMITTED FOR THE HEARING RECORD

MCDONNELL DOUGLAS

PRIVILEGED LEGAL COMMUNICATION

Law Department

June 17, 1993

Ms. Cheryl G. Matcho, Clerk
Legislation and National Security Subcommittee
B-373 Rayburn House Office Building
U.S. House of Representatives
Washington, D.C. 20515

Subject: April 22, 1993 Oversight Hearing of Air Force C-17 Airlifter

Dear Ms. Matcho:

Enclosed, as corrected and signed in accordance with the guidelines provided, are the transcripts of the testimony of John F. McDonnell, Herbert J. Lanese, and David O. Swain at the subject hearing.

Mr. Lanese noted, in addition, one minor error in his testimony. Upon reviewing Mrs. Maloney's question at page 84, line 1964, Mr. Lanese points out that his answer at line 1965 should have been: "That is not completely correct." The full answer, as set out in the McDonnell Douglas Corporation 1992 Annual Report to Shareholders (incorporated in its Form 10-K report for the fiscal year ended December 31, 1992) is as follows: "As of December 31, 1992, the estimated value of the contract at completion includes $208 million of revenue from expected recovery on claims filed during 1990 and 1991 and to be filed with the Air Force." The discussion of the C-17 claims from page 42 of the Annual Report is attached to page 84 of Mr. Lanese's transcript as supplemental material.

Also submitted herewith is the supplemental information requested at pages 53 and 112 of the transcript. Based on subsequent discussions between Subcommittee Staff and McDonnell Douglas' Washington office, we understand that, if it desires copies of the Air Force cost and operational effectiveness studies discussed at page 87 of the transcript, the Subcommittee will request those studies from the Air Force.

Please contact me or Mark Kronenberg in our Washington office if there should be any further questions concerning the enclosures.

Very truly yours,

J. W. Walbran
Vice President
Associate General Counsel

P.O. Box 516, Saint Louis, MO 63166-0516 (314) 232-0232 TELEX 44-857

ONE HUNDRED THIRD CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON GOVERNMENT OPERATIONS

2157 RAYBURN HOUSE OFFICE BUILDING

WASHINGTON, DC 20515-6143

March 15, 1993

The Honorable Les Aspin
Secretary
Department of Defense
The Pentagon
Washington, D.C. 20307-1155

Dear Mr. Secretary:

As you know, the Legislation and National Security Subcommittee of the Committee on Government Operations has scheduled an oversight hearing to examine the C-17 Airlifter Program for Wednesday, March 17, 1993.

On January 21, 1993, I formally requested the testimony at that hearing of Mr. Michael B. Donely, Assistant Secretary of the Air Force for Financial Management; Ms. Eleanor Spector, Director of Defense Procurement; Lieutenant General Edward P. Barry, former Program Executive Officer; Major General Michael Butchko, former C-17 Program Manager; and Major General John M. Nauseef, former Deputy Chief of Staff, Air Force Systems Command.

As I explained in my letter of March 8, 1993, to effectively execute its legislative and oversight responsibilities, the Subcommittee requires the attendance of the witnesses identified in my earlier request. Our two year long investigation indicates that these individuals can provide relevant testimony about the inappropriate funneling of federal funds to McDonnell Douglas, and the concealment of critical information about the C-17 Program from senior defense officials as well as the Congress.

Despite almost two months advance notice of the Subcommittee's need to receive testimony from these witnesses, to date we have received no assurance that the Department of Defense will provide them.

Under the circumstances I must conclude that you are refusing the make these witnesses available for our hearing on Wednesday. Please provide us with the legal basis for this refusal by close of business today.

Sincerely,

John Conyers, Jr.
Chairman

ONE HUNDRED THIRD CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON GOVERNMENT OPERATIONS

2157 Rayburn House Office Building

Washington, DC 20515-6143

March 8, 1993

The Honorable Les Aspin
Secretary
Department of Defense
The Pentagon
Washington, D.C. 20307-1155

Dear Mr. Secretary:

I received today a letter from your special assistant, Ms. Deborah Roche Lee, dated March 5, 1993, suggesting alternative witnesses to those requested in my letter of January 21.

As I said in that letter of invitation, the Subcommittee is conducting an on going review of "the financial and technical aspects of the program, as well as the conduct of Air Force personnel involved with the administration of the C-17."

Our two year long investigation indicates that there may have been collusion on the part of officials at the Department of Defense to inappropriately funnel federal funds to McDonnell Douglas, and to conceal critical information from senior defense officials as well as the Congress. We requested testimony from those individuals who were most directly implicated. Each of the requested witnesses was personally involved in actions currently under investigation by this Subcommittee, and their testimony is necessary to complete that investigation.

To effectively execute its legislative and oversight responsibilities, the Subcommittee requires the attendance of the witnesses identified. If the Department of Defense wishes to suggest additional witnesses, however, we will of course consider them.

Please confirm that the witnesses identified in my letter of January 21, 1993 will appear at the Subcommittee hearings scheduled for March 17 and 18, 1993, so that we will be able to avoid compulsory process.

Sincerely,

John Conyers, Jr.
Chairman

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OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301

LEGISLATIVE
AFFAIRS

5 March 1993

Honorable John Conyers, Jr.
Chairman, Committee on Government Operations
House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

This is in response to your letter of January 21, 1993, to Secretary of Defense Aspin in which you invite five Department of Defense individuals to appear as witnesses at a hearing on March 17, 1993, on the current status of the C-17 program.

As I discussed with Mr. Julian Epstein, Staff Director of the Committee on Government Operations, on March 2, the individuals you invited are not now responsible for the management of the C-17 program and cannot address the current status of the program. The Department of Defense will provide as witnesses Lieutenant General John E. Jaquish, Principal Deputy Assistant Secretary of the Air Force for Acquisition; Major General Charles E. Franklin, Program Executive Officer for Tactical/Airlift Programs; and Major General Patrick P. Caruana, Director of Long Range Power Projection, SOF, Airlift, and Training Programs. These witnesses are knowledgeable on the current status of the C-17 program.

On behalf of the Secretary of Defense and the rest of the DoD team, I look forward to working with you in the months ahead.

Sincerely,

Deborah R. Lee

Deborah Roche Lee
Special Assistant to the Secretary
of Defense for Legislation

THE SECRETARY OF DEFENSE

WASHINGTON, THE DISTRICT OF COLUMBIA

25 FEB 1993

Honorable John Conyers, Jr.
Chairman, Committee on Government Operations
House of Representatives
Washington, DC 20515

Log. No. 3.9.93

Dear Mr. Chairman:

I am responding to your letter of January 26 concerning the Inspector General's recent report on the C-17 program. You recommended the C-17 program be suspended and any wrongdoing be severely punished.

The military need for the C-17 has been clearly established, and this Administration strongly supports the improvements in airlift capability it provides. I am concerned about the actions alleged to have been taken by certain officials as described in the Inspector General's report. As a result, we intend to assess this report thoroughly before we decide on the actions the Department will take in response. I have already requested additional information and recommendations from the offices of the Secretary of the Air Force and the Under Secretary of Defense for Acquisition. It would be premature to make any major program decisions until I have had the opportunity to review the program.

I have also asked the Air Force to provide the officials for whom disciplinary action was recommended the opportunity to respond to the report's findings. The Air Force will then provide an analysis of the report's findings and the officials' responses before any personnel actions involving them are taken. It is important that these individuals be given a chance to respond to the charges made against them, but it is also important that personnel actions such as promotions not go forward until these matters are resolved.

I appreciate your concerns and assure you appropriate action will be taken to address the issues raised in the Inspector General's report.

Sincerely,

cc: Honorable William F. Clinger
Ranking Republican

THE SECRETARY OF DEFENSE

WASHINGTON, THE DISTRICT OF COLUMBIA

19 FEB 1993

MEMORANDUM FOR SECRETARY OF THE AIR FORCE

SUBJECT: Inspector General's Report on Government Actions Concerning McDonnell Douglas Corporation Financial Condition During 1990

I am troubled by the allegations, findings, and recommendations contained in the Inspector General's report addressing actions taken by Air Force officials from July through December 1990 on the C-17 program. Before we decide on the steps the Department of Defense will take in response to the report, I would like your recommendations. Therefore, I request that you provide any additional factual information that should be considered, along with your proposed response to the recommendation that disciplinary action be taken against five Air Force officials, within 60 days to the Deputy Secretary of Defense.

Since these individuals have not yet had an opportunity to respond to the report's findings, please provide each of them the opportunity to respond as soon as possible, but no later than within 60 days. Additionally, I direct that before any personnel actions involving any of these individuals are taken you provide to me your analysis of the findings and any responses from the individual involved.

The Inspector General also recommended the Air Force initiate an Anti-Deficiency Act investigation for C-17 progress payment request number 97. I direct that you conduct this investigation immediately.

ONE HUNDRED THIRD CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON GOVERNMENT OPERATIONS

2157 RAYBURN HOUSE OFFICE BUILDING

WASHINGTON DC 20515-6143

February 9, 1993

The Honorable Stuart M. Gerson
Acting Attorney General
Department of Justice
Washington, D.C. 20530

Dear Mr. Attorney General:

I am writing because of disturbing new evidence uncovered by the Department of Defense Inspector General concerning the Air Force's C-17 Airlifter program. The evidence set out in the Inspector General's report to the Committee on Government Operations strongly suggests that there may have been a conspiracy at the Department of Defense to secretly bail out McDonnell Douglas (the prime contractor for the C-17), and to intentionally conceal critical information from senior defense officials as well as the Congress. A copy of that report is enclosed.

The Inspector General has thoroughly documented a plan of action to provide unusual financial assistance to McDonnell Douglas during the last half of 1990. As the Inspector General concluded:

> "Air Force officials implemented a plan of action to provide financial assistance to the Douglas Aircraft Company (DAC), a part of MDC [McDonnell Douglas Corporation], during August through December 1990 to ensure the contractor continued performance on the C-17 Program.... The actions centered on meeting contractor cash flow requirements without requiring the contractor to disclose the nature or extent of its financial difficulties, as required by acquisition regulations for advance or unusual payments. Expedited government payments were made that exceeded appropriate amounts by $349 million. Financing provided also exceeded the fair market value of undelivered work by an additional $92 million. Improper contracting actions reduced contractor financial risk on the C-17 Program by $1.6 billion and created a false appearance of success to both facilitate the contractor obtaining additional financing through commercial sources and issuance of debt securities, and the Air Force obtaining additional funding from Congress.

> The improper actions substantially increased Government program risk, provided premature payments to the contractor, negatively impacted first aircraft delivery, and contractually obligated the Government to award a subsequent Lot III production contract. Award of the Lot III production contract was particularly important because it provided an additional source of funding to the contractor, and a further false indication of program success. These actions also resulted in potential violations of statutes and acquisition regulations." [Government Actions Concerning McDonnell Douglas Corporation Financial Conditions During 1990, pp. 3-4]

Based on their roles in the plan of action to provide unusual financial assistance to McDonnell Douglas, the Inspector General recommended disciplinary action against three senior Air Force officials -- Lieutenant General Edward P. Barry, C-17 Program Executive; Ms. Darleen A. Druyun, Principal Assistant Deputy Chief of Staff (Contracting), Air Force Systems Command; and Major General Michael J. Butchko, Jr., C-17 System Program Director.

I am referring this Inspector General report to you and request a prompt evaluation and prosecution of the potential violations of law documented therein.

In addition to reviewing these findings by the Inspector General, I am also requesting that you review the testimony of senior defense officials who repeatedly denied knowledge of this plan of action before the Legislation and National Security Subcommittee, which I also chair.

In May of 1992, Colonel Kenneth D. Tollefson, the Commander of the Defense Plant Representative Office at Douglas Aircraft Company, recounted an October 2, 1990 meeting at the Pentagon. I enclose a copy of this Subcommittee hearing, The Air Force C-17 Aircraft Program. As Colonel Tollefson explained, those in attendance at that meeting discussed a McDonnell Douglas request for $550 million:

> Mr. Conyers. Who was there?
>
> Colonel Tollefson. A lot of people. It was a full room. OSD, Air Force, Defense Contract Management Command. I was there, my boss, General Henry was there. The Air Force senior acquisition executive and PEO were there. There were a lot of people there.

Mr. Conyers. Where was it held?

Colonel Tollefson. As I recall it was in Mr. Welch's conference room.

Mr. Conyers. And what happened?

Colonel Tollefson. Mr. Betti opened the meeting by explaining that John McDonnell had petitioned him that he needed, as I recall, $550 million before the end of the year or he would be forced to stop work on the C-17 Program. [C-17 Hearing, p. 425]

Major General Michael Butchko, the former C-17 Program Director, and Mr. John Welch, the Senior Acquisition Executive for the Air Force, also testified under oath before the Subcommittee. In contrast to Colonel Tollefson's testimony, both of these senior officials denied any knowledge of a specific request for money by McDonnell Douglas (C-17 Hearing, pp. 546-71).

Specifically, Mr. Welch repeatedly denied any knowledge of a McDonnell Douglas request for $550 million. For example, Mr. Welch gave the following testimony:

Mr. Conyers. Well, let's talk about the $550 million request that was made, to put it politely.

Mr. Welch. Sir, I know of no specific request for $550 million made at that time or any specific dollar request made at any other time to me.

Mr. Conyers. Now wasn't there some comment about the need for an advance payment somewhere in the neighborhood of $550 million on the part of Mr. McDonnell?

Mr. Welch. To the best of my knowledge, sir, I recall on statement along those lines.
[C-17 Hearing, pp. 546, 549]

Similarly, at that same hearing, General Butchko denied any knowledge of this request for funding. One example of General Butchko's testimony is the following:

General Butchko. I do not recall that Mr. Betti was there. But, again, I also heard no mention of the figure 550, or any other specific figure.
[C-17 Hearing, p. 550]

General Butchko further testified that he could not even recall being at an October 2, 1990 meeting where the McDonnell Douglas request for $550 million was discussed, and denied having any notes of that meeting. The transcript reads:

> Mr. Conyers. Well, are we talking about October 2, 1990, or another meeting?
>
> General Butchko. Sir, I cannot tell you a specific date.
>
> Mr. Conyers. All right. Do you have any records? I know you go to a lot of important meetings, but would you have any logs that would show where you were invited to a meeting at the Pentagon on Oct. 2, 1990?
>
> General Butchko. I do not have any records that would indicate that. I checked what few notes I had. I have no note that specifically mentioned those dates.
> [C-17 Hearing, p. 550]

After reviewing the transcript for accuracy, Gen. Butchko submitted the following statement to the Subcommittee:

> Subsequent to 13 May hearing, I found brief notes indicating that I did attend 2 Oct 90 meeting at the Pentagon that was chaired by Mr. Betti. (Annotated notes attached).
> [C-17 Hearing, p. 551-53]

General Butchko's notes document the precise date of the meeting, and the magnitude of the need on the part of McDonnell Douglas:

> Betti 2 Oct 90
> Betti comments
> MDC out of $ by end of Oct(?) What can we do w/in next week?
> Cann -- Doesn't want to appear we are bailing out MDC.
>
> 548 "need"
> 300-350 available?
> 200-250 short
>
> [C-17 Hearing, pp. 552-53]

These notes by General Butchko, which document some discussion of a "need" by McDonnell Douglas for $548 million, corroborate the testimony by Colonel Tollefson and apparently impeach that of General Butchko and Mr. Welch.

I would also direct your attention to an earlier blanket denial that there was a plan of action to provide unusual financial assistance to McDonnell Douglas by Director of Defense Procurement Eleanor Spector. On July 24, 1991, Ms. Spector gave the following sworn testimony before the Subcommittee:

> "...we did not provide advance payments, unusual payments, or any unique payments to McDonnell Douglas." [Oversight Hearing on the A-12 Aircraft, p. 232, copy enclosed]

Ms. Spector's testimony is at odds with the conclusion of the Inspector General that there was a plan of action, which included "[e]xpedited government payments ... that exceeded appropriate amounts by $349 million" (IG Report, p. 3).

This is an extremely serious matter, as senior defense officials and Air Force officers apparently made repeated efforts to mislead the Subcommittee. There is no question that our hearings would have taken a different direction had these questions been answered honestly. Similarly, General Butchko's initial concealment of his notes is deeply troubling. I am referring these false statements to you for evaluation and prosecution under 18 U.S.C. 1001 and other applicable criminal statutes.

Finally, I wrote to former Attorney General Barr in September 1992 regarding a DOD Inspector General investigation of defects in the McDonnell Douglas C-17 wings. My concern at that time was for the safety of the aircraft and its overall quality assurance program. A few weeks later, the wings of the static test model broke during a stress test. I am enclosing a copy of that September 1992 letter and renewing my request for an immediate reopening of the criminal investigation of this matter by the Department of Justice.

I appreciate you prompt attention to my requests.

Sincerely,

John Conyers, Jr.
Chairman

Enclosures
cc: Honorable Les Aspin

ONE HUNDRED THIRD CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON GOVERNMENT OPERATIONS

2157 RAYBURN HOUSE OFFICE BUILDING

WASHINGTON DC 20515-6143

January 26, 1993

The Honorable Les Aspin
Secretary
Department of Defense
The Pentagon
Washington, D.C. 20307-1155

Dear Mr. Secretary:

Congratulations on your appointment as Secretary of Defense. We will miss your expertise here in the House, but your guidance and leadership are badly needed in the Pentagon.

I am sorry to start off my first correspondence to you with a monumental problem, but unfortunately that is the case. On February 21, 1992, I asked the Department of Defense Inspector General to investigate and document an allegation that I had made earlier as to favoritism and advantageous treatment of McDonnell Douglas by the Department of Defense. The report by the Inspector General is now in my hands.

For two years I have been asking Air Force and Defense Department personnel about these matters. On the one hand I am outraged by what I see in this report, and at the same time I am saddened by what I see as the betrayal of the trust placed in general officers of the military by the American people. The procurement system is badly damaged. But more important, the credibility and integrity of the services has been severely tarnished by the actions of these officers.

The IG's report and the investigation by the Legislation and National Security Subcommittee, which I chair, have confirmed our allegations. There was a concerted plan by the Pentagon to bail out its largest contractor.

The Inspector General of the Department of Defense has done an outstanding job in unravelling a very complex financial plan that was simply designed to get money to the contractor and cover-up the massive problems, both technical and financial that were mushrooming. This report shows large sums of money being paid to the contractor inappropriately, and possibly illegally, during a time when the financial condition of McDonnell Douglas was in a critical state. Other actions involved extraordinary measures taken with respect to contract "modifications" and "adjustments" that were clearly to the detriment of the taxpayer who, of course, is picking up the tab for this fiasco.

I will use excerpts from the report itself as often as possible to ensure that we are not misrepresenting the tone of the report. McDonnell Douglas is claiming that there is information in the report that are either trade secrets, or proprietary and confidential to the company. A more realistic assessment is that the information is incredibly embarrassing. While the Inspector General is challenging this assertion by the contractor, I will make every effort not to divulge material that may possibly be in that area. However, the disclosure of public funds flowing to the contractor, and the conduct of Air Force leaders, can in no way be claimed as proprietary information, and I will not treat it as such.

There is one comment in the Summary of Results that I will expand on later. It cuts to the heart of the acquisition system and to the integrity of the Air Force itself.

> "Established Government oversight and internal management control processes,...which would have otherwise detected or prevented those actions, were impaired by Air Force officials. These officials provided incomplete and misleading information, and, in some cases, relied on <u>intimidation and abuse of their positions of responsibility to cause improper actions to be taken</u>." (Emphasis added)

The report states that:

> "Air Force officials implemented a plan of action to provide financial assistance to the Douglas Aircraft Company (DAC), a part of MDC, during August through December 1990 to ensure the contractor continued performance on the C-17 Program."

The results of these actions were astounding. The report continues:

> "Expedited Government payments were made that exceeded appropriate amounts by $349 million. Financing provided also exceeded the fair value of undelivered work by an additional $92 million. Improper contracting actions reduced contractor financial risk on the C-17 Program by $1.6 billion and created a false appearance of success to facilitate both the contractor obtaining financing through commercial sources and issuance of debt securities, and the Air Force securing additional funding from Congress."
>
> "The improper actions substantially increased Government program risk, provided premature payments to the contractor, negatively impacted first aircraft delivery, and contractually obligated the Government to award a subsequent Lot III production contract. Award of the Lot III production contract was particularly important because it provided an additional source of funding to the contractor, and a further false indication of program success. These actions also resulted in potential violations of statutes and acquisition regulations."

It is important to remember that at this very same time period the Navy A-12 program was also in serious trouble. It was later proven that there was also deception and misrepresentation of facts to the Secretary of Defense and to the Congress about the A-12. That program was cancelled in January 1991 after $2.6 billion had been spent. The contractors involved in the A-12 were McDonnell Douglas and General Dynamics. In February 1991, over $1.35 billion owed back to the Government by McDonnell Douglas and General Dynamics was deferred indefinitely by the Department of Defense. Although dividend payments have continuously been paid to the stockholders of both companies, no interest payments have ever been collected on the $1.35 billion debt.

The IG commented on the similarity between the two programs:

> "We found numerous similarities between the management of the failed Navy A-12 Program and the Air Force C-17 Program during the fall of 1990. The Navy, however, conducted an administrative inquiry into the management of the A-12 Program while the Air Force, and in particular the General Counsel [Ann C. Peterson], and Assistant Secretary of the Air Force (Acquisition) [John J. Welch], refused to do so."

The report continues to document the breakdown of the entire acquisition system:

> "The findings of our review reflect the failure and circumvention of management controls established within the DoD acquisition system. Management controls that would have otherwise been effective were circumvented through abuse of authority, resulting in inequitable treatment to the advantage of the contractor. Air Force officials, and in particular the SPD [System Program Director-Brigadier General Michael Butchko], acted to create an appearance of propriety for their actions, and plausible deniability for any accountability on their part."
>
> "The SPD, with the assistance of the Deputy Comptroller of the Air Force Systems Command, [Brigadier General John M. Nauseef] used his rank and position to direct or influence a wide range of improper actions. He was subsequently praised for his actions and promoted by the Air Force. Further, when the USD (A) [Under Secretary of Defense for Acquisition-Mr. John Betti] and the DoD Inspector General voiced concerns in the Spring of 1991 about the actions of the SPD, the Air Force summarily decided no further review of these matters was warranted. Conversely, the DPRO Commander [Defense Plant Representative Office Commander-Col. Kenneth Tollefson], an Air Force Colonel, acted to protect the Government interest and was criticized for not being a "team player." Eventually he paid a price in future assignments determined by the Air Force that, in part, resulted in his retirement decision."

The criticism of the DPRO Commander and his staff by the Program Office is highly unfortunate, for they appear to be the only major effort in the C-17 Program to do it right. One document provided by the DPRO cited within the report described a September 29, 1990 meeting as:

> " '...we needed to get money to McDonnell Douglas in order to save the program. That was the focus of Gen. Butchko's efforts We [the DPRO] were supposed to save the program by giving McDonnell Douglas the money they thought they deserved to continue the program... The focus was to get cash and when regulations were brought up that prevented us from doing that, then the focus became how can we get around the regulation or get a waiver to the regulation.'"

The deception regarding this program goes farther then just Air Force officials:

> "We consider the actions of BG Butchko, BG Nauseef, and Mrs. Druyun [Principal Assistant Deputy Chief of Staff, Air Force Systems Command] inappropriate. They acted in concert to influence the DPRO to make progress payments based on financial need...The actions of those Air Force officials temporarily masked the actual financial condition of the contractor by permitting the contractor to defer recognition of a loss on the contract and retain excess unliquidated progress payments to which the contractor was not entitled and which should have been recouped...Further, the actions, when considered together with modifying the 2108 contract on September 24, 1990 to establish a delivery schedule known to be unachievable...intentionally created an illusion of contractor stability and program success. Subsequently, on October 23, 1990, the DAC (Douglas Aircraft Company) reported as part of the third quarter 1990 financial results, that it expected to complete the contract without incurring a loss...rather than behind schedule and above ceiling price."

We intend that this matter be referred to the Securities and Exchange Commission for investigation.

In the hearing held by the Legislation and National Security Subcommittee in May 1992, it was alleged that on October 2, 1990, there was a demand by the Chairman of the McDonnell Douglas Corporation for approximately $500 million, or he would shut down the C-17 program. The DPRO commander testified that there was a commitment made to provide certain funds. The report addresses that situation as follows:

> "According to three DPRO representatives at the briefing on October 4, 1990, BG Butchko stated that the Air Force had 'promised' the contractor $300 million in the month of Oct 1990...payments on order of $300 million in October were not possible."

The contractor and the Air Force went to great lengths to come up with schemes that would try to cover or justify their actions. One of the more original was the Monthly Estimate to Complete or "METC" system. This was invented to draw attention away from the negative historical information and try to focus on current performance.

This contractor proposal, approved by the Air Force, would use a measurement technique for a period as short as a month.

> "As such, it provided no real basis for performance measurement and was merely a spending plan. To achieve adequate cost and schedule performance measurement, performance must be compared to the contract performance measurement baseline."
>
> "We believe that the contractor, with Air Force approval, devised the 'METC' approach as a subterfuge. ...The METC technique was developed by the contractor at significant cost, with one estimate as high as $1 million."
>
> "We believe BG Nauseef and BG Butchko understood fully that the METC process was flawed; however, they intended to use it to achieve their objective of increasing contractor cash flow."

As the report states, the briefing given by Brig. Gen. Nauseef and the Air Force to the Under Secretary of Defense for Acquisition on October 16, 1990 were collectively an attempt to defer reduction of any progress payments until after the end of the fiscal year. The report provides further that:

> "We believe that the PEO (Program Executive Officer-Maj. Gen. Barry), who has overall cognizance for the C-17 Program, should have demanded that the SPD curtail his efforts to create a false appearance of success toward achieving the contractor EAC (Estimate at Completion)...As a result, the contractor would have been paid the full amount of progress payments requested starting with the November 1, 1990 payment request, which included FSED (Full Scale Engineering Development) costs for which funds were previously not available to make payment."

This attempt by the Air Force and Douglas Aircraft Company also affected subsequent production lots. At the May 1992 hearing held by this subcommittee, we asked numerous questions about Lot III and Lot IV production contracts. The report shows that these contracts are clearly tainted:

> "Agreement on the award of the Lot III contract would benefit the contractor by making additional funding

available since long-lead funding was nearly exhausted, while providing another contract to shift engineering costs to as a result of the accounting practice change."

"We believe the contractor reported the understated EAC as of September 29, 1990 in order to defer recognizing a loss on the 2108 contract in the company's third quarter financial reports, which recognized the 2108 contract as at or near break even after consideration of $125 million in claims yet to be submitted to the Government ... The deferral of loss recognition was particularly important to the contractor at this point because of the registration statement filed with the Securities and Exchange Commission on August 1, 1990 in order to obtain additional long term financing." (Emphasis added)

The deception and manipulation by the senior officials in this matter is bad enough, but unfortunately it went even further:

"During his visit to the DPRO, BG Nauseef was viewed by DPRO personnel as using 'definite intimidation' to encourage the DPRO to be a 'team player' and agree to the use of alternative means to measure contractor performance, specifically the 'METC' technique. One DPRO official provided the following description of how BG Nauseef handled opposition to the 'METC' technique by the DPRO Deputy Commander, an Air Force lieutenant colonel:

> 'I do remember General Nauseef saying, look, if you're not going to be a team player, Lieutenant Colonel, then just get out of here. You don't need to be in this meeting if you're not going to be a team player. It got a little tough.'"

Such conduct by senior officers is deplorable. The Defense Plant Representative, a colonel, stood up to the generals involved and was rewarded by being reassigned or being retired.

"One DPRO official commented that BG Butchko and BG Nauseef supported the 'METC' technique solely because it supported their objective of providing cash flow to the contractor, and if someone did not support the use of 'METC,' they were not a team player."

> "The issue became not what EAC was supportable based on contractor progress, but rather what EAC would yield a particular payment to the contractor...The persistence of BG Butchko and BG Nauseef directly influenced the resulting determination. For comparative purposes, had a $7.2 billion EAC been used, the contractor would have received $7.4 million instead of $59.2 million."
>
> "We believe that the use of the $7.1 billion EAC rather than the higher EAC recommended by the EAC review team was a direct result of the actions of BG Butchko and BG Nauseef. We calculated for comparative purposes that implementation of the higher EAC...would have resulted in a payment of only about $18.4 million instead of the approximate $143.6 million actually paid...The difference of over $125 million is significant when viewed in comparison to the MDC financial statements as of December 31, 1990, which reflect a total cash balance of $226 million."

Not only did all of these other methods provide cash to the contractor, but the Air Force also paid more frequently than allowed, resulting in the contractor receiving an extra progress payment before the end of 1990, also the company's fiscal year end. As the report states:

> "...Air Force officials with no authority for administration of progress payments were working 'deals' with the contractor concerning what EAC would be used for progress payment purposes."

In addition elaborate steps were taken to ensure overruns were not paid for by the contractor, as they should be in a fixed price contract.

> "At least $172 million, including $13 million for production of Lot III, that had been charged to the development portion of the contract from December 1988 to September 1990 was reallocated to production effort...In essence, only the overrun on FSED was shifted to production..."
>
> "As of October 1990, the amount reallocated had increased to $184.5 million, including $14.9 million and $.5 million for long-lead requirements for Lot III and IV respectively. In July 1991, the long-lead requirements and corresponding contract prices were moved to a new production contract."

The action here that is so outrageous is that the contractor had exhausted the development funds and therefore was responsible for payment of any further costs. What happened is that these Senior Air Force officials took it upon themselves to transfer that shortage of funds to the taxpayer rather than the contractor. That action is inexcusable. As before, it didn't stop there.

> "We believe the October 1990 transition proposal for sustaining engineering costs from development to production lots and Air Force approval were only part of a far more reaching plan to circumvent internal controls and provide funding to the contractor ...Therefore, the chain of events was an attempt to postpone implementation of a substantially higher EAC until after the Lot III contract award, which was projected for December 1990."
>
> After contract award, the SPO could use an EAC computed in October 1990 or later that reflected the transition of sustaining engineering costs from development to production and request additional funding based on 'cost growth.' That course of action would open the use of expired appropriations to fund the cost growth on Lot III that was already known to exist prior to the planned contract award and would not require congressional approval because of 'cost growth.'"

By now you have the focus of the report.

I ask that you suspend this program now, if only to find out the true status of both the contracts and the aircraft structure. We will call for the immediate investigation of the McDonnell Douglas Corporation by the Securities and Exchange Commission into the financial reporting on this program.

I am also asking the Justice Department to reopen the criminal investigation into the C-17 program. When the Inspector General was asked during the May 13, 1992 hearing before my Subcommittee if the Air Force had hindered the criminal investigation, he stated:

> "...Well, in effect that got us into a situation where we didn't have a victim. You can't have a crime without a victim or when there is a willing victim."

The Air Force refused to take exception to the deficiencies in the wings that were being discovered by the Defense Criminal Investigative Service and the FBI. Instead, they were very willing to accept whatever the contractor gave them. Remember, this is the same group of people running this program as is identified in the report.

Finally, I will ask for the prosecution of any individual involved in any criminal act in dealing with this program. I will also ask that you take appropriate measures to ensure that any wrongdoing is severely punished by those involved. The message must be clear that this conduct will not be tolerated. No program is so valuable as to be above the law, and no program is worth paying for with the integrity of the Armed Services.

Sincerely,

John Conyers, Jr.
Chairman

Chairman Conyers: This subcommittee throughout its investigation has stated that the problem with the wing issue is not that there will be a catastrophic failure, but that we have no real idea of the durability, and therefore, no proof of the life of the wing. Is that true?

Mr. Vander Schaaf: We agree that the risk associated with C-17 wing fasteners is related to durability, not catastrophic failure.

While tests can only approximate fatigue life, a complete test program would increase our confidence level. To date, Durability Test Vehicle tests are still being conducted. Also, coupon tests for riveting in C-17 wings are incomplete. They do not include stress-corrosion tests with the same materials and rivet expansion of the lower wing panels or fatigue tests with the amount of rivet expansion actually in the C-17 wings.

Chairman Conyers: We have been told that durability testing will answer that question, but you have stated that the wings of the durability test article, (a full scale mockup of the C-17), are not representative of the fleet of C-17s. Is that true? And if so, of what value is the lengthy durability testing program?

Mr. Vander Schaaf: We have only looked at Durability Test Vehicle (DTV) testing in terms of wing rivet expansion. The amount of rivet expansion documented in the 2024 aluminum alloy of C-17 lower wing skins in ships manufactured after the DTV is not present in DTV wings (DTV was ship 5). Therefore, in terms of rivet expansion in the lower wing skins, the DTV wings are not representative of later production wings.

The extent to which DTV wings will be representative of the retrofitted wings or a possible final production wing design has yet to be determined.

The testing program will provide durability information on major structural components. The DTV tests will approximate two life times. The DTV will then be subjected to a residual strength test and a tear down inspection. Data analyses and reports should be completed in 1995.

The durability testing program is an essential part of the design maturation as well as a demonstration of the aircraft's ability to meet the performance requirements of the contract.

Chairman Conyers: In your March 1, 1993 final report on the fastener quality, you stated:

> "[The Defense Logistics Agency special review] results confirmed and heightened our concerns that the deficiencies identified in this report are systemic."
>
> "The DLA found significant problems in the areas of product integrity, quality assurance, manufacturing management, engineering and program support, subcontracting management, estimating, property administration, specialized safety, flight operations, and internal audit."

Given that incredible statement of significant problems, how can you guarantee airworthiness?

Mr. Vander Schaaf: While quality control problems do raise concerns about the general safety of flight, our technical assessment of mechanical fasteners did not uncover specific safety problems. We expect that the Air Force will address all matters that may impact airworthiness as they arise during the flight test phase.

Chairman Conyers: To cut through much of the technical issues, what you are saying is that the testing being done is not representative of what we have in this airplane, and therefore is of questionable value?

Mr. Vander Schaaf: Our statements about the limited value of current testing apply solely to mechanical fasteners in the wings. As mentioned in my testimony, the exact degree of risk associated with the overexpanded rivets in C-17 wings could easily be determined through a series of additional, simple, very modestly priced tests. There is no need, however, to modify the whole concept or regimen of Durability Test Vehicle testing.

Chairman Conyers: How much time and money are we talking about to do the tests right?

Mr. Vander Schaaf: Stress-corrosion tests and fatigue tests of coupons could be conducted in a matter of weeks. A rough cost estimate for the tests is $10,000 to $20,000. The exact cost would depend upon several factors such as who conducted the tests, how comprehensive they are, and how many coupons are included.

Chairman Conyers: Mr. Welch also stated to this Subcommittee that, "I can tell you that any payments that I was aware of, and that we have since reviewed, were paid on the basis of that which was contractual and correctly due them...." Do you believe that to be a true statement?

Mr. Vander Schaaf: Based on our review, we disagree that the progress payments received by the contractor in the Fall of 1990 were made in accordance with acquisition regulations and contract terms. However, individual knowledge of the specific details of these payments is part of an ongoing criminal investigation by the Defense Criminal Investigative Service, and we cannot discuss these matters until the investigation is completed.

Chairman Conyers: Please review the May 1992 testimony of the Assistant Secretary of the Air Force, Mr. Welch. How would you characterize his statement to the Subcommittee that he knew of "...no specific request for $550 million made at that time or any other specific dollar request made at any other time to me."

Mr. Vander Schaaf: Based on our review, the $548 million figure calculated by the contractor was a "worst-case" scenario projection of contractor financing required if no Government contract financing in the form of progress payments was provided on the C-17 Program through December 1990. As such, the figure was a projected "need" for Government financing by the contractor. According to numerous witnesses and documents obtained during our review, the Assistant Secretary of the Air Force for Acquisition was present at meetings where the contractor's $548 million financing shortfall on the C-17 program was presented by the contractor and discussed among Government officials. Additionally, the Assistant Secretary was aware of contractor informal requests for conversion to 100 percent flexible progress payment rates on DoD contracts, including for the C-17 aircraft, which would have increased contractor payments. Also the Assistant Secretary was aware of contractor requests for immediate resumption of progress payments after the Administrative Contracting Officer determined to withhold payments until a supportable Estimate-at-Completion was submitted to the Government by the contractor. Therefore, the Assistant Secretary either lacked recall of the specific events or was not being forthright with the Subcommittee in presenting the full extent of his knowledge of the financing shortfall and its implications with regard to the contractor stopping work on the C-17 Program.

Chairman Conyers: General Butchko testified before the Subcommittee in May 1992 about "T-1 Assembly Complete," and other financial issues to include the truth of the certification he signed accepting T-1. How would you characterize his testimony of last May?

Mr. Vander Schaaf The former C-17 System Program Director appeared not to be fully prepared for the hearing in May 1992. He also appeared to not recall the details of a number of critical matters of interest to the Subcommittee at the hearing. We were particularly disturbed that the Program Director considered the need for a "morale-boosting victory" for contractor employees as part of the basis for accepting "T-1 Assembly Complete" in December 1990. Such factors have little place in an objective process of contractual acceptance. The Program Director also testified to the limited schedule gained by painting the T-1 aircraft over the holiday season as part of the acceptance decision, but not the substantial schedule delays associated with performing remaining assembly work "out-of station" on the ramp outdoors instead of in the assembly facility. Limiting remaining assembly work so as not to disrupt ground and flight test operations was a specific acceptance factor in the agreement with the contractor on the definition of "T-1 Assembly Complete," and was ignored by the Program Director in his testimony. He also failed to mention that basic functionality of numerous on-board systems was not fully demonstrated as required by the agreement with the contractor. Our report criticizes the Program Director's description of remaining work on the T-1 aircraft as minimal in his December 1990 memorandum on the acceptance of "T-1 Assembly Complete," and the failure to establish contractual withholds for incomplete work including the incomplete work acknowledged by the Air Force System Program Office and the contractor.

Chairman Conyers: You mentioned violations of statutes. Which statutes were violated and by who?

Mr. Vander Schaaf: Violations of 31 U.S.C., § 1301 occurred, and violations potentially occurred of 31 U.S.C., § 1517 and 1341, and 10 U.S.C., § 2307. The Air Force is conducting Anti-Deficiency Act violation investigations into the potential violations of the various fiscal statutes, and we made recommendations in our report to ensure DoD compliance with the fair value provisions 10 U.S.C., § 2307. We have also opened a criminal investigation into violations of criminal statutes. When the investigations are completed, we will be able to report whether violations of the various cited statutes occurred and, if so, who was responsible.

Chairman Conyers: In your report on the financial dealings between McDonnell Douglas and the Air Force in the last half of 1990, you state that intimidation was used against subordinates. Who was involved in the intimidation?

Mr. Vander Schaaf: Our report describes a pattern of intimidation and misuse of authority primarily by the C-17 System Program Director, but also by the Deputy Comptroller and Principal Assistant Deputy Chief of Staff for Contracting, Air Force Systems Command. The C-17 System Program Director repeatedly used his position to leverage procurement and contract administration personnel and processes, often based on input from the contractor, in order to obtain continued contractor performance through improper financial concessions. The Deputy Comptroller used his position to impose flawed processes for assessing contractor performance in an effort to limit the Estimate-at-Completion used for progress payment purposes, thereby maximizing payments to the contractor. The Principal Assistant Deputy Chief of Staff for Contracting assisted in convincing Government officials to make payments without a supportable Estimate-at-Completion when application of a loss ratio was clearly warranted. Statutory and regulatory requirements for making advance or unusual payments based on demonstrated contractor financial need and with appropriate notification and approval were ignored based on the Principal Assistant Deputy Chief of Staff's insistence on the existence of a compelling financial urgency to make progress payments.

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-2884

APR 7 1993

Honorable Al McCandless
Ranking Minority Member
Subcommittee on Legislation
and National Security
Committee on Government Operations
House of Representatives
Washington, D.C. 20515

Dear Congressman McCandless:

This is in reply to your letter of March 22, 1993 regarding followup questions related to my recent testimony concerning the C-17 aircraft. Our response to each of your specific questions is enclosed.

To summarize our concern about the uncertainty related to the potential effects of rivet overexpansion in the C-17 wings: we found that a complete set of tests have not been performed that would justify the amount of expansion allowed in Douglas Aircraft Company Process Standards or the actual amount of expansion recorded in quality assurance records for the C-17 wing rivets.

It is standard industry practice to establish expansion limits based on testing. On the McDonnell Douglas commercial side, testing was requested for the MD-11 airliner when rivets were "slightly overexpanded." On the Defense side, test reports presented to us do not include stress-corrosion tests with the same materials and rivet expansions of the C-17 lower wing panels or fatigue tests with the amount of rivet expansion actually in the C-17 wings, even though the expansion is as much as twice the Douglas standard. We stand by our conclusion that, in the absence of adequate testing, there should not be an exception allowed to the standard for rivet overexpansion that is as much as twice the contractor's standard.

Frankly, we are disappointed that the Air Force has thus far refused to perform the inexpensive additional testing needed to put this issue to rest. We will pursue the matter through the prescribed Department of Defense process for resolving issues raised in our reports.

If you should have any questions, please contact me or Mr. John R. Crane, Office of Congressional Liaison, at (703) 614-0491.

Sincerely,

Derek J. Vander Schaaf
Deputy Inspector General

Enclosure

cc: Honorable John Conyers

Question 1: Your January report details a series of Fall 1989, transactions which you conclude demonstrate a deliberate effort to provide unearned cash to McDonnell Douglas. Further, in its testimony to the House Armed Services Committee on March 10th, the GAO described a series of December 1992, contract modifications which permitted Lot III delivery delays and provided additional long lead funding on Lots IV and V. Does it appear to you that these latest modifications once again reflect an Air Force attempt to keep production on line regardless of longterm contract costs?

Response: The recent actions to modify the C-17 contract delivery schedule and provide additional long lead funding for Lots IV and V are a direct result of continuing schedule slippage on the C-17 program. Rather than being an Air Force attempt to keep production on line, the modification of the production schedule is a recognition of continuing production delays that will impact the costs on existing contracts and the overall life-cycle costs of the program. Provision of additional long lead funding for subsequent production lots is beneficial to meeting production schedules on future contracts; however, it appears to be essential to the C-17 program because the prerequisites for contract award established in the event-based acquisition strategy have not been met on schedule. Long lead funding is generally provided in order to ensure delivery schedules can be met by ensuring long lead items are available when required on future production contracts, not because of failure to meet contract milestones and inability to complete contract negotiations. The failure of the contractor to make deliveries or complete prerequisite events on schedule resulted in repeated contract modifications of the delivery schedule and exceptionally high levels of long lead funding relative to estimated contract prices. We share the GAO concern about the Government risk associated with such high levels of long lead funding prior to an agreement on contract price and believe it serves to further delay contract negotiation.

We have not reviewed the consideration received by the Air Force for the modification to the contract delivery schedule; however, we intend to do so as part of a new audit of the C-17 program to begin later this month. We previously reported that the Air Force received inadequate consideration for previous contract modifications to the delivery schedule, which in our opinion was a significant and unjustified financial concession to the contractor. I also mentioned in my testimony to the Committee that, given the extended delays in the award of the Lot IV contract, it is our recommendation not to make the award until after a Defense Acquisition Board review is completed.

Finally, it should be noted that one of the primary obstacles to completing Lot IV negotiations is the allocation of sustaining engineering costs to production contracts. Our reports, and

testimony addressed the accounting practice change that permitted the present allocation methodology, which was inappropriate and approved hastily in October 1990 as a financial concession to the contractor to overcome near-term funding shortfalls.

Question 2: There seems to be some dispute between the IG's office and McDonnell Douglas as to the potential effects of rivet expansion on the wings. Would you provide Mr. Stavenjord's background and qualifications for conducting this type of detailed technical engineering assessment?

Response: Our team was well qualified for this type of assessment and we have full confidence in their findings. Mr. Stavenjord typically directs technical assessments for over one hundred projects a year. He holds masters and baccalaureate degrees in Mechanical Engineering and a baccalaureate degree in Engineering Science. Examples of other projects directed by Mr. Stavenjord are the technical assessments of the Balanced Technology Initiative for Ultra Wideband Technology, the Low Temperature Effects on Air-Launched Cruise Missile Flight Data Transmitters, and the corrosion in C-17 aluminum.

Prior to being selected in 1984 as Technical Director of the Technical Assessment Division, Office of the Inspector General, Department of Defense, Mr. Stavenjord was appointed as Professor of Engineering Management at the Defense Systems Management College in 1983. He was Director of the Surface Warfare Systems Foreign Military Sales Program for the Naval Sea Systems Command (NAVSEA), 1979-83. Also, at NAVSEA he was Senior Project Engineer for the TERRIER Weapon System's computer programs and modernization, 1975-79; Project Engineer for advance missiles development, 1975; and completed the Management Development Program, 1972-75. He was Project Engineer on the Anti-Ship-Missile Defense Program at the Naval Ship Weapon Systems Engineering Station, 1968-72.

Also working on the program were Mr. Chandra Sankhla, Mr. Milton Kaufman and Mr. William Fox, Sr. Mr. Sankhla possesses a masters degree in Industrial and Systems Engineering and two bachelor degrees, one in Mechanical Engineering and the other in Mathematics. He has approximately 28 years of experience in engineering and management, including 12 years in defense acquisition and 11 years in design and manufacturing.

Mr. Kaufman has a baccalaureate degree in Industrial Management and over 46 years of experience in manufacturing and management, which includes 18 years in defense acquisition and 28 years in industry.

Mr. Fox possesses over 27 years of experience in Government and industry, which includes acquisition and manufacturing experience.

Question 3: Why do you find current testing and the planned durability article test insufficient to measure the impact of rivet expansion on wing lifespan?

Response: The testing reported to us did not include stress-corrosion or fatigue tests for all the materials, tempers, dimensions and rivet expansion of the structures they were purported to represent. In addition, the durability article does not contain the amount of rivet expansion in the 2024 aluminum alloy of the lower wing skins that is present in later C-17 ships.

The testing conducted to date consisted of stress-corrosion tests requested for the MD-11 commercial airliner program, stress-corrosion tests requested by the Air Force in response to our questions, and tension-tension fatigue testing conducted for qualification of the automatic riveting machines. The test reports presented to us do not include stress-corrosion tests with the material and rivet expansions of the lower wing panels or fatigue tests with the amount of rivet expansion actually in the C-17 wings.

Concerning the Durability Test Vehicle (DTV), the amount of rivet expansion documented in the 2024 aluminum alloy of C-17 lower wing skins in later ships is not present in DTV wings. Therefore, in terms of rivet expansion in the lower wing skins, the DTV wings are not representative of later production wings. Although not a good test for stress-corrosion, the C-17 durability test could have provided information on possible fatigue failure from the amount of rivet expansion in the lower wing skins of later aircraft if the DTV were representative. Since it is not representative, the DTV warranty provisions do not protect the Government from the possible effects of the amount of rivet expansion being experienced in the later production aircraft.

Question 4: Both McDonnell Douglas and the Air Force have stated that the acceptance of T-1 Assembly Complete was never meant to imply that the plane would be entirely finished. They state that you have misinterpreted the term. Please provide your response to this assertion for inclusion in the record.

Response: We fully recognize that the term "T-1 Assembly Complete" was never meant to imply that the plane would be entirely finished. The central point made in our reports and testimony is that the establishment, pricing and acceptance of the T-1 Assembly Complete contract line item were significant

concessions to the contractor. The Air Force actions impaired proper oversight of the program by the Congress and the Office of the Secretary of Defense, and provided false indications of program success in order to assist the contractor in obtaining external financing and the Air Force in obtaining additional funding from the Congress. That point aside, the facts of the matter are that the aircraft did not meet the terms established for acceptance, the Air Force was aware it did not at the time of acceptance, and no withholds were established for the incomplete work. For example, basic functionality of numerous aircraft systems was not demonstrated as required. Significant out-of-station work logically resulting from premature movement of the aircraft from the assembly facility had a major impact on ground and flight test operations, although minimal disruption of those preflight activities was a condition of acceptance. Required documentation was incomplete and the Air Force acknowledged in its acceptance that certain additional work was required. Finally, the C-17 Program Director explained his actions as being based partly on providing a morale boosting victory to contractor employees, which is not justification for overlooking the true status of the aircraft.

It is important to note that T-1 Assembly Complete was established as a contract line item as part of the consideration exchanged for significant contractor delays in aircraft delivery. In essence, the Air Force provided consideration to the contractor for the slippage. Subsequently, the Air Force priced the contract line item based on an analysis of incurred costs provided by the contractor with no assessment of physical progress toward acceptance of aircraft T-1 at first flight. Together with the premature acceptance decision, that disturbing pattern of actions was, in our opinion, part of a larger effort to encourage continued contractor performance through implementation of an Air Force plan of action to improperly assist contractor cash flow during a period of financial difficulty.

Question 5: How different are the problems of the C-17 from those affecting most other major defense system acquisitions?

Response: The fact that the C-17 program has experienced problems in development is not unusual; however, the lack of candid disclosure of the problems and appropriate action by Air Force management clearly separates the C-17 from other major Defense acquisition programs. In that regard, we see numerous similarities between the failed Navy A-12 program and the C-17 program in how management responded when development problems occurred. Programs can experience a wide range of problems that are generally overcome by timely recognition and prudent management action. The refusal of the Air Force to acknowledge the problems on the C-17 program unduly delayed corrective

actions and compounded the problems. We believe that overly zealous program advocacy obscured the need to reestablish sound systems engineering discipline and to negotiate executable development and production contracts. Eventually, the lack of candor only served to increase oversight and scrutiny of the program and further delay needed management action. Additionally, the denial of problems consumed the attention of program management as the facts came to light and management's credibility was called into question. The problems on the C-17 program were to a large extent predictable and, therefore, avoidable. As such, we view the program not as a failure of the acquisition process, but rather of individuals. We made recommendations accordingly.

Question 6: Your solution to the problems with the management of this contract is to make the Program Executive Officer directly answerable to the Under Secretary of Defense for Acquisition. No one else from the House Armed Services Committee, the Air Force, or GAO seems to accept this easy answer solution. They all argue that the military's "Can Do" mentality is the problem, and that redrawing lines on a paper will have little effect. Why do you continue to support the command chain restructuring fix?

Response: We disagree that a "can do" mentality is a problem per se; in fact, that attitude is probably pervasive in successful programs and should be encouraged. Our recommendation is focused on establishing program management accountability to the Defense Acquisition Executive. While seemingly simple, it addresses what we consider to be the fundamental problem of a lack of long term accountability to the one official specifically holding authority to make the most critical program decisions. Those decisions ultimately are as good as the information upon which they are made. Accurate and candid information must be provided by the program managers, unfettered by the "needs and desires" of the Military Services.

Our recommendation is intended to create unity in the acquisition process between the program manager and the decision authority by significantly reducing the potential for direct influence from outside the acquisition chain of command. Presently, the linkage between responsible program management and the system of individual performance evaluation and recognition is only indirect, thus permitting potentially conflicting goals or objectives to be inserted into the management process. The A-12 and C-17 management problems highlight the need for program officials to be responsive to the informational requirements of the Defense Acquisition Executive. The current system of officer (program manager) performance evaluation does not provide for input from the Under Secretary of Defense for Acquisition.

Our recommendation would create the proper individual allegiance on acquisition matters not to a particular Military Department, but rather to the overall best interests of the Department of Defense, as determined by the civilian leadership. In so doing, barriers to candid disclosure in the acquisition process that may presently exist can be overcome.

Mr. Horn: What steps are being taken at the Department of Defense as a result of your report on "Government Actions Concerning McDonnell Douglas Corporation Financial Condition during 1990?

Mr. Vander Schaaf: On February 19, 1993, the Secretary of Defense tasked the Under Secretary of Defense for Acquisition to respond within 60 days to the recommendations in our report that were addressed to the Office of the Secretary of Defense. On the same day, he tasked the Secretary of the Air Force "to provide any additional factual information that should be considered, along with your proposed response to the recommendation that disciplinary action be taken against five Air Force officials, within 60 days to the Deputy Secretary of Defense." He also directed that each of those officials be given an opportunity to respond and no personnel actions be taken involving them until the Air Force analysis was provided. Finally, he directed the Air Force to conduct the Anti-Deficiency Act violation investigation for C-17 progress payment request number 97, as recommended in our report.

Mr. Horn: Is there any evidence to suggest that McDonnell Douglas requested payments in excess of their costs incurred or in excess of the contract ceiling price?

Mr. Vander Schaaf: No. McDonnell Douglas was not entitled, however, to a significant portion of the payments made during fall 1990, for the reasons set forth in my testimony and our reports. In addition, recent testimony and documents provided by Mr. Jenne provide strong indication that the overpayments were larger than we reported.

Mr. Horn: You did not give the Air Force an opportunity to comment on this report. Is it possible that rather than there being a "bailout" scheme, the Air Force was making a good faith attempt to keep production on schedule?

Mr. Vander Schaaf: The Air Force has ample opportunity to comment on the report now. In fact, the Secretary of Defense has tasked the Air Force to do so.

There is no doubt the Air Force wanted to keep the Contractor working so that further program slippage could be avoided. Although the goal was laudable, we found that improper actions were taken to achieve it. Those actions resulted in large payments, which could not be justified under the procurement laws and regulations, at a time when the contractor was in financial difficulty. In that sense, a "bailout" occurred, without the knowledge or consent of either the Office of the Secretary of Defense or the Congress.

Mr. Horn: Concerning your report on the potential effects of rivet expansion in the wings, why do you find the existing tests and future durability article test insufficient to measure the impact of rivet expansion on wing lifespan?

Mr. Vander Schaaf: The testing of the effects of rivet expansion consisted of stress-corrosion tests on different material in the MD-11 airliner program, stress-corrosion tests requested by the Air Force in response to our concerns, and tension-tension fatigue tests conducted to qualify the riveting machines. We were told that additional fatigue tests were done, but no results were provided to us. The testing to date does not include stress-corrosion tests with C-17 lower wing panel materials and the degree of overexpansion that is happening to rivets in those panels. Likewise, fatigue tests with that degree of overexpansion are still needed.

The Durability Test Vehicle (DTV) cannot be used to measure the impact of rivet expansion on wing lifespan because the largest #12 rivet expansion we found on the DTV was .084 inch, whereas rivets on other ships were expanded up to .210 inches. The lower wing skin rivets on the DTV are therefore not representative of the rivets on other aircraft.

Mr. Horn: How different are the problems affecting the C-17 from those affecting most other major defense system acquisitions?

Mr. Vander Schaaf: Nearly all major weapon system acquisition programs encounter some combination of technical, cost, schedule, or production problems because of their complexity. The severity of those problems range widely between programs. The degree of problems being experienced in the C-17 program is, in our view, unexpectedly large, given the facts that a transport aircraft should not be overly complex or entail exotic technology and the prime contractor is experienced in building large commercial aircraft. The C-17 program differs from most other major weapon acquisition programs in that we have found improper actions by officials responsible for its management and oversight. Thus far, there has also been a marked reluctance by the Air Force to acknowledge problems in the program and to demand accountability for them. We believe that open, balanced discussion of the program's status is essential, especially in the early stages when the DoD and Congress face the most important funding decisions. In the case of the C-17 and A-12 programs, decision makers were not well served by some officials' propensity to act only as program advocates and to suppress bad news

GAO

United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

April 14, 1993

The Honorable Al McCandless
Ranking Minority Member
Subcommittee on Legislation
and National Security
Committee on Government Operations
House of Representatives

Dear Mr. McCandless:

On March 30, 1993, you requested that we respond to questions submitted by Congressman Steve Horn as follow up to the March 18, 1993 hearings on the C-17. The enclosure provides our response to those questions.

If you have any further questions, please call me on (202)512-4841.

Sincerely yours,

Louis J. Rodrigues
Director, Systems Development
and Production Issues

Enclosure

GAO Responses To
Questions For The Record
Submitted By Congressman Stephen Horn (R-CA)

Question: It is my understanding that the Office of the Secretary of Defense agrees with the Air Force's revised delivery schedule for the C-17. Is this correct?

Response: We are not aware of any "agreement" by the Office of the Secretary of Defense (OSD) with regard to the revised C-17 delivery schedules, nor is OSD required to give agreement. However, we are aware that the Defense Plant Representative Office (DPRO) concluded that the revised delivery dates were achievable, with the proper application of contractor resources. Subsequent tracking of production trends have raised our concerns that even the revised schedule may not be met.

Question: As you note, the C-17 aircraft has several technical problems. Is it unusual to discover technical problems during development and production of a major defense system? Is McDonnell Douglas taking steps to address each problem?

Response: No, it is not unusual to discover technical problems during development of a major defense system. However, when you have program concurrency, such as in the C-17, where you have development, testing and production going on at the same time, programs have run into problems of either producing or committing to producing a substantial number of units prior to all of the significant technical problems being identified and workable solutions in hand to correct them. As a result, the program is required to go back and retrofit units already produced or in production which could significantly drive up program costs.

As we have indicated in our testimony, some of the technical problems the C-17 program has encountered include the static wing failure; problems with the flaps, slats, and main landing gear; and fuel leak problems. At this time McDonnell Douglas is taking steps to address each of these problems, but their full resolution may not be evident for sometime. We expect that other deficiencies will be found and require corrective action, resulting in additional delays.

GAO

United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

April 2, 1993

The Honorable Al McCandless
Ranking Minority Member
Subcommittee on Legislation
and National Security
Committee on Government Operations
House of Representatives

Dear Mr. McCandless:

Here are our responses to the questions you submitted to us as follow up to the March 18, 1993 hearing on the C-17.

1. What exactly is an undefinitized contract? How unusual is it? Why does it put the government at risk?

Undefinitized contracts authorize contractors to start work and incur costs before the contractor and the government have reached agreement on the terms and conditions, including price, of the contract. Their purpose is to allow work on a project to begin before the details have been negotiated when there is an urgent need. In the past, undefinitized contracts have been used extensively by DOD. For example, as of September 30, 1985, DOD's use of these contracts was at its highest level ever--about $28 billion. We do not have current information on the extent undefinitized contracts are being used throughout DOD. However, their use is significant on the C-17 program. For example, the Air Force has obligated 70 percent of the funds authorized for lot IV under an undefinitized contract and may obligate 100 percent of the authorized funds prior to contract definitization which is scheduled for July 1993.

This extensive use of undefinitized contracts raises serious concerns. For example, Air Force legal counsel has determined that even the most fundamental contract rights of the government, namely, an enforceable delivery schedule and the right to terminate for default, are not enforceable in an undefinitized contract. In addition, undefinitized contracts place the government in an

unfavorable negotiating position, shift risk from the contractor to the government, and reduce contractor incentives to control costs because the contractor is operating under essentially a cost plus as opposed to a fixed price contract. These contracts also limit government oversight. Since there are no deliverables under these contracts, the normal contractor cost performance reporting is not required and the government is not able to readily measure progress on the program.

2. What is the difference between the ability to land on 3,000 feet of a 10,000 foot runway and landing on a 3,000 foot runway?

The difference is the margin of safety. On a 3,000 foot runway the plane has to touch down in the first few hundred feet to land safely. On a 10,000 foot runway the pilot has a several thousand foot piece of concrete to aim for and can miss the beginning of the runway and still land safely. The ability of the C-17 to consistently land on a short runway as opposed to landing in a short distance on a longer runway has not yet been proven in testing.

3. What is the C-17's soft field landing capability? Will the C-17 be able to hit the type of soft, plowed field it was sold for?

The C-17 is supposed to land on austere fields not soft fields. An austere field is defined in terms of size and the ability to support loading and unloading operations rather than in terms of soft or hardened surfaces. The C-17 is being designed to land on a hardened or semi-hardened 3,000 feet long and 90 feet wide runway with limited parking and turning areas.

4. The costs of wing repairs is estimated at $50+ million. How much more are flap and slat repairs, the landing gear fixes, the software completion, the engine redesign, and testing delays expected to cost?

We cannot say at this point in time what the estimated costs for the list of fixes and contract completion items is likely to be. In the case of the landing gear and engine the "fix" has not been decided so any cost estimate would be premature. The completion of the software development and the completion of testing are part of the development contract and any extra cost to the government would

result from the resolution of not yet filed claims against the Air Force on that contract. However, the delays in software development and delays in the test program may increase costs on follow on contracts because of the need to retrofit completed or in process aircraft as changes occur or problems are identified. Currently the contractor estimates that the flap and slat redesigns will cost:

SLATS	
Development and lot 3 contracts (McDonnell Douglas responsibility)	$22 to $31 million
lot 4	$7 to $8 million
lot 5 (8 aircraft)	$13 to $14 million
FLAPS	
Development and lot 3 contracts	$11 to $31 million
lot 4	$3 to $9 million
lot 5 (8 aircraft)	$7 to $16 million

5. What percent of operational testing has been completed as of March 18, 1993?

Operational testing normally is not accomplished until after substantial developmental testing has been completed. However, some items that can count as operational testing can be accomplished during developmental flight testing. This has been done on the C-17 program. According to current estimates by testing officials only about 1 percent of operational testing is complete.

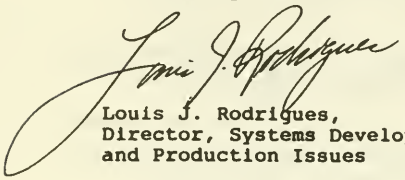
6. What percent of total flight testing had been completed as of March 18, 1993?

Because the testing that has to be completed often changes as a result of problems that occur during the tests or because of production changes or fixes, it is very difficult to give a percent complete at a

single point in time. However as of the time of the hearing, about 25 percent of the planned developmental flight testing on the C-17 had been accomplished.

If you have any further questions, please call me on (202)512-4841.

Sincerely yours,



Louis J. Rodrigues,
Director, Systems Development
and Production Issues

April 23, 1993

Ms. Cheryl G. Matcho
Room B 373
Rayburn House Office Building
Washington, D.C. 20515

Dear Ms. Matcho :

On April 13, 1993 sent you a marked up copy of my testimony to the Committee on March 17, 1993.

I am not sure whether or not my full written statement I asked to be included in the record is the one I intended. To clarify that, the correct full written statement I intended was the one I sent to Eric Thorson on March 8, 1993. To clear that up, I am sending you a copy of it in full and ask that it be included as I had expected it would be during the hearing.

Thank you for your patience.

Very Truly Yours,

William E. Jenne

William E. Jenne
1622 Dalmatia Drive
San Pedro, California 90732
(310) 519-9093

March 05, 1993

Statement of William E. Jenne

Thank you for asking me to appear before this committee today on the subject of the situation at the Douglas Aircraft Company in the first half of 1990.

I retired from the McDonnell Douglas Corporation at their Douglas Aircraft Company in June 1988 after 27 years service. My experience was all with Douglas at Long Beach, California, predominantly in the fields of cost estimating, pricing, cost control, scheduling and program planning and evaluation. While an employe, I held various positions such as the Director, Company Operations Control, Director of DC-10 Program Planning and Control, Director of Major Subcontracts and Director of MD-11 Operations Control.

After retirement in 1988, I became the Vice-President, Financial Control for a small company which intended to re-engine DC-9 and B737-200 aircraft with Rolls-Royce Tay 650 engines in order to meet stage 3 noise criteria and extend such aircraft's service life and value. After a year and a half, the company was closed for lack of sales in December, 1989.

In January, 1990 I went back to Douglas on a contract basis as a consultant to Mr. R. A. Bibee the then Vice-President of Fiscal. My job assignment was to develop an independent cost estimating and pricing function reporting to Mr. Bibee. This function became necessary as all such activity and responsibility had been turned over to each individual Program Office after the company reorganization of February, 1989. This left the core fiscal management organization without the resources to provide an effective and experienced check and balance function as well as ensure that reliable financial data went into the required financial statements.

Possibly a litle background of events prior to 1990 might be of help in understanding the conditions that existed between January, 1986 and June, 1988 which then became manifest in 1990.

First, business at Douglas had picked up considerably by January, 1986. MD-80 Sales rose requiring rapidly increased production schedules to meet contractual delivery dates. This in turn meant the hiring of large numbers of new personnel in fabrication, planning, tooling and assembly. Assembly part shortages became a major problem resulting in much higher assembly unit costs than had been planned or forecast. By the summer of 1987 MD-80 assembly actual hours per airplane had doubled to 90,000 hours, up from previously attained levels of 45,000 hours and contract delivery dates began to be missed, severely.

Second, the company had successfully won development contracts for the T-45 navy jet trainer and the C-17 military cargo airplane program. In addition, the company authorized full scale development and production of the MD-11 commercial airliner. This meant that in addition to the increasing MD-80 production requirements the company would have to perform three almost simultaneous design and development programs and accomodate the huge demands for technical and production personnel and facilities.

The last time the Douglas Company had attempted major concurrent design and development programs was in 1964-1966 with the DC-9 and DC-8-60 programs. The enormity of that effort ended in failure and resulted in insolvency, requiring the Douglas Aircraft Company to merge with McDonnell in April, 1967 in order to avoid bankruptcy. As it turned out both programs were technical successes but financial diasasters. Douglas stock dropped from $ 110 a share to $ 20 in 9 months. Only 55 of 111 DC-9's

scheduled for delivery in 1966, were delivered. One need not be an expert to see what a devastating effect that had on cash flow.

Successfully accomplishment of such an undertaking requires thorough and realistic technical, financial and resource planning, free from bias, euphoria and wishful thinking. Equally important is the ability to detect and correct out of plan conditions during the execution phase with as little "gamesmanship" as possible. The Douglas Company had to face this challenge again, in 1986.

Third, in 1986 forecasts of company fabrication capacity requirements indicated that by the fourth quarter of 1987 the total capacity to build parts at Long Beach would be exceeded. The overload was forecast to climb to 150 % of capacity by 1990. This situation required the initiation of an immediate subcontract effort to offload major subassemblies and their parts manufacture from the C-17, MD-11 and MD-80 assembly lines which were then planned for in-house manufacture.

Between June, 1986 and the spring of 1988 very little was done to relieve this overload. The C-17 and MD-11 Program Offices did not want to put their subassemblies out for subcontract as they felt they would lose control of the manufacturing process. They fought hard to either discredit the capacity forecasts or to have core management "find" other solutions to the overload. As a result, part shortages climbed to a point where 30 % of parts required on the assembly lines were past due to the start of assemblies. The entire company fabrication effort on all programs was over ten weeks behind schedule by May, 1988 and growing worse each week.

An example of the impact of this situation was the assembly of the first MD-11. The sixth week of assembly, scheduled for mid May, 1988

required the start of assembly of the center wingbox section. This assembly was important because it had to be completed prior to joining the two wing halves together and moving on to wing to fuselage join. This particular assembly had many machined planks, spars, stringers and clips used to put it all together. Many of those parts were then forecast to be as much as 36 weeks behind schedule because of capacity and engineering problems. Yet not much was done about it other than to say the first flight date of January, 1989 would be made, somehow. The airplane's first flight in January, 1990 was a year late. Shortages became so severe that the fabrication shops were run on an almost 100 % expedite basis which is no way to run a multi-product, modern factory.

Fourth, competition for engineering personnel between the three programs was a very real problem. Availability of experienced engineers outside of Douglas to meet the C-17 and MD-11 design manload requirements was almost non-existent. As a consequence, Douglas was forced to hire a very inexperienced work staff on all development programs. The level of average years of engineering experience dropped from 13.8 years in 1984 to 7.4 years by mid 1988, right in the middle of both the C-17 and MD-11 design efforts. Company engineering direct headcount rose from 2,896 in December, 1985 to over 6,500 in the fourth quarter of 1989.

Consequently, drawings were released an average of 6 to 9 months late to schedule on both the C-17 and the MD-11. In addition, the incidence of drawing errors rose dramatically on both programs, further exacerbating an increasingly impossible schedule situation on both programs.

Experienced manufacturing personnel were also difficult to hire in the open job market. Headcount rose from 3,473 at the end of 1985 to over 10,000 by 1989. Average years of experience dropped by 5 years.

There can be little doubt that the assimilation of that many new assembly personnel was a significant causal factor in the 100 % + increase in the MD-80 assembly unit manhours and the large overruns in assembly on both the C-17 and MD-11 programs.

Overall, the Douglas Company's total headcount increased from approximately 23,000 in the first quarter of 1986 to about 50,000 by May 1990. What happened to headcount during the 1986 -- 1990 timeperiod is an almost mirror image of what happened in the 1964 -- 1966 timeperiod, previously discussed. There were 17,500 employes at Long Beach in January, 1964 which rose to 60,000 by early 1967, right at the time of the insolvency and subsequent merger.

Fifth, during this 1986 -- 1990 timeperiod, subtle if not overt changes began to take place in the company culture. Inordinate attention began to be focused on "people programs" and such things as the "Five Keys To Self Renewal", all of which detracted from the large airplane tasks we had to perform. The staff meetings I attended during 1986 --1988 in my various assignments dealt primarily with such topics as :

1. Quality of work life.
2. Company ID badge and parking lot democracy.
3. Career pathing.
4. Alternative work hours.
5. Ombudsman activities.
6. High potential employe selection programs.
7. Teamwork concepts and the value of consensus.
8. Roundtable discussion results.
9. Personal and departmental goal setting.
10. The importance of interpersonal relationships.

The most pernicious effects of such social engineering efforts were a marked decline in awareness of cost, schedule and technical status and a growing lack of clear cut responsibility/accountability in the operating divisions of the company in favor of a democratic, teamwork, consensus driven management style. It got to a point where it was difficult to find

real decision makers or anyone who was responsible for anything. A good example of this was the indecision relative to the fabrication overcapacity problem mentioned earlier. No one at the highest at the highest management levels at Douglas would make a decision about what to do about the overload situation, until it was too late. It just got studied to death.

The confusion over line management responsibility and accountability versus those of the various Program Managers became increasingly unclear.

Ultimately, this was supposed to be resolved by the extreme reorganization of management in February, 1989. This was later referred to at Douglas as the "Massacre" and by Colonel Tollefson in his testimony before this committee on May 13, 1992 as "traumatic".

Much has been said and written about this abrupt and severe management shakeup but there can be little doubt that it dramatically aggravated an already poor management environment. The company was reorganized into an almost exclusively Program Management oriented structure. The old, more traditional functions such as Manufacturing, Engineering, Testing, Product Support and Financial Management were broken up and their duties assigned within each program office. A central core function for these activities no longer existed. Nor was there a central core check and balance function. The abolition of a check and balance function was a particularly bad decision, effectively eliminating any independent financial estimating and analyses, cost and schedule progress evaluations, pricing and the issuance of responsible financial statements. Most well run organizations have this type of function, if they want to remain solvent.

The reorganizational objectives of the McDonnell management may have had some merit but the execution was a costly and amateurish blunder.

Now, back to January, 1990. I took a consulting job working for Mr. Bibee the then Vice-President of Fiscal, as an assistant to him. He wanted me to develop an independent cost estimating and forecasting department so that he could better judge the merits of the financial forecasts and cost of sales estimates then being provided to Finance by the various Program Offices.

In addition, he wanted an assessment of the current program's performances as he had doubts about the quality of status reports given to to management by the Program Offices. As a part of the TQMS management system, all program financial data were prepared by the Program Offices and turned over to the Financial Division for processing into the company financial statements, without the right of change or approval.

I had been away from the company for 18 months and upon my return in January was dismayed at the conditions in the factory as well as the level of inexperience in key management functions. There was a pervasive attitude of finger pointing and lack of assumption of responsibility throughout the plant.

Cooperation between core company functions and the Program Offices was at best almost nonexistent. Access to program operating information was controlled by, censored and limited by direction of the Program Offices, without challenge.

After a two week indoctrination class in the companywide TQMS management process I began my assignment. Personnel selection for this new function was primarily from a cadre of well experienced cost estimators still on Mr. Bibee's staff. After getting the function staffed and organized we began looking into the cost and schedule status of current major programs, the MD-80, MD-11 and the C-17.

The first program we looked at was the MD-11 assembly production costs as compared to the 1990 Operating Plan dated November, 1989. The results of the review were sent to Mr. Bibee by memorandum C1-006-WEJ-90-12, dated 4-12-90. Some notable facts from that review were :

1. No. 2 actual manhours were 129 K over the Operating Plan EAC and only 89.8 % complete. Estimated EAC overrun of 220 K MH, 33 %.

2. No. 3 actual manhours were 139 K over the Operating Plan EAC and only 73.9 % complete. Estimated EAC overrun of 357 K MH, 74 %.

3. No. 4 actual manhours were 40 K over the Operating Plan EAC and only 61.4 % complete. Estimated EAC overrun of 324 K MH, 79 %.

4. No. 5 actual manhours were on the the Operating Plan EAC but only 55.2 % complete. Estimated EAC overrun of 272 K MH, 75 %.

In summary, the expected learning curves were not being attained. We estimated that assembly cost would overrun the Operating Plan budgets by $ 486.7 Million on the first 50 aircraft, $ 675.3 Million on the next 251 aircraft for a total overrun of $ 1.162 Billion to the 301 airplane pool quantity then used by Finance for average costing of sales. Those estimates assumed a 75 % assembly learning curve which Douglas had not achieved on any program since the DC-10 in 1972. Those estimates were optimistic possibly by at least another $ 500 to $ 750 Million.

The second program we looked at was the MD-80. It was 1 1/2 months behind schedule (the 1990 Operating Plan, dated November, 1989 had 11 MD-80's for delivery in January, 1990 and one was actually delivered) and overrun. The report indicated actual assembly hours recorded on airplanes delivered through March, 1990 versus the Operating Plan budgets were overrun by 15.3 %. This was particularly bad news, as the MD-80 was a mature production program and was not forecast to be a problem.

The next review was of the C-17 assembly cost and schedule status. That review was completed and sent to Mr. Bibee by memorandum on 4-19-90. That review was a difficult one as certain management personnel questioned the need for it and the motive as well. They exhibited a hostility regarding "whistleblowing" as it was verbalized to me. I was directed to "clear" any findings with the program office.

In beginning the review, I had gone over to Bldg. 54, the C-17 main assembly building to see first hand what the first airplane (T1) looked like physically. It had been reported that the wing to fuselage join assembly operation had been completed when in fact it was far from complete. The wing to fuselage had not been joined and the wing was suspended about two feet above the fuselage. There were no leading edges on the wing nor trailing edges attached, either. The wing was in a very "green" condition and so was the fuselage. There were numerous QA tags for oversize holes, waiting for the right size fasteners to arrive. Many of the fuselage sections were not permanently fastened. Little if any electrical, plumbing or interior installations were installed. The first airplane looked like a shell.

The statistics regarding progress on the assembly of the T1 and P1 aircraft were as follows:

	EAC Hours	Act.Hours 4-01-90	Perct. Comp.	Perct. Spent	Estimate At Comp.
T1	1,600,000	994,632	21.2%	62.2%	2,842,000
P1	1,350,000	447,979	11.8%	33.2%	2,105,000

These estimates extrapolated through the first seven aircraft on a 75 % learning curve indicated a possible overrun of 5.9 Million manhours at completion. A real problem, to say the least.

The details of my visit were covered in the referenced memo to Mr. Bibee and orally to Mr. Joe Pirkle who had just been assigned to replace Bibee. Mr. Pirkle had been the Vice-President for Product Center Operations which was the parts fabrication end of the business. I believe Mr. Pirkle must have thought the C-17 was coming along OK, but after reading the referenced memo he went out to the C-17 assembly area and evidently became convinced that the program was in trouble.

I saw Pirkle several days later and he indicated that the memo was pretty much on the mark. Within days, the Business Manager of the C-17 program was removed and the Program Manager was relieved.

Concurrently, a retired Fiscal Vice-President, Mr. Ray Kleinberg had been hired to help the financial people develop the data required to produce subsequent years bidding rates for submittal and approval to the DoD. During this activity, the financial data flowing into Kleinberg from the program office estimating departments was so bad that he ultimately asked for a meeting with the senior management council to present his concerns and ask for a totally independent review of all estimates.

Following the memo's to Bibee and Pirkle, Pirkle's visit to the C-17 assembly line and Kleinberg's meeting with the senior management council, the president and the newly appointed assistant president Capellupo, things began to move rapidly. It was decided by Capellupo to bring a group of financial experts out from the Corporate Offices and have them independently look at the situation. This review was completed during the last week of April, 1990.

Many people, including myself, were interviewed by the Corporate team of 5 people. Their conclusions found that the C-17, MD-11 and the MD-80 programs were all in serious cost and schedule trouble and equally

important, cash flow would be negatively impacted, enough possibly, to create a serious problem with the banks. They also found that the labor and overhead rates for 1991..1993 currently being prepared for negotiation with the Government were seriously understated due to underestimated and misscheduled direct labor bases.

They presented their findings to the senior management council during the first week of May, 1990. I read their findings but was not allowed to keep a copy of it.

Subsequently, Pirkle directed the estimating group I had formed to prepare a complete reestimate of the C-17 Program costs and to complete it as soon as possible, but no later than mid May, 1990. He also directed the C-17 newly named Business Manager to do the same thing. This new Business Manager had been a member of the Corporate review team discussed above. Also, Capellupo was named as the new C-17 Program Manager in addition to his assistant president responsibilities.

The reestimate efforts proceeded on a 10 hour day, 7 day workweek basis with many sessions of coordination with the C-17 personnel to get all relevant facts into the process. The estimates were completed on May 15, 1990 and reviewed with Pirkle. He directed us to meet with the C-17 business people and recap our two estimates on a comparative basis for review with Capellupo. This recap was completed on May 18, 1990. The estimates were for the FSED, FY 88 and FY 89 procurements, in total, generally referred to as the 2108 Contract.

The recap contained estimates for 5 different conditions and displayed the cumulative actual costs incurred on the C-17 through 4-30-90 :

1. 4-30-90 ACTUALS displayed all recorded actual cost to date through 4-30-90 from the company official accounting system.

2. DEC PLAN which was the C-17 Program Office estimate made in December, 1989 and used in the company's financial statements.

3. C-17 PLAN which was the May, 1990 C-17 Program Office Estimate

4. FISCAL which was my group's May, 1990 estimate.

5. CONSENSUS which was the result of an attempt to get the Program Office and Fiscal to agree on one set of numbers. This column did not represent what Fiscal believed to be the most probable estimate and was so related to Pirkle.

6. 2.76% PLAN this simply showed the hours and dollars left to complete the contract AND NOT overrun the estimate of $ 6.461 Billion, which was significant to management as the company was accruing and reporting profit of 2.76 % against that value.

Several abbreviations require explanation :

1. ETC stands for estimate to completion.
   --
2. EAC stands for estimate at completion.
   --
3. PRODUCTION includes assembly, planning, industrial engineering scheduling and production control.
4. PROD. DEF. means product definition and includes engineering, and assembly tool design and manufacture.
5. LAB/FLT means laboratory and flight testing.
6. PCO stands for product center operations and includes parts fabrication, parts planning and farication tool design and manufacture.
7. QA stands for quality assurrance and is inspection.
8. ILS stands for integrated logistics support and includes all product support efforts.
9. OTHER includes program office costs such as administration of the CSCS reporting requirement.
10. LABOR & REL. COSTS is the total dollars for the hours, above, and consists of direct labor, overhead, general and administrative, and direct charges.
11. PROCUREMENT includes all purchased items such as major subcontracts, general procurement, instruments and special equipment and intercomponent supply.
12. TOTAL COST is the addition of labor and related and procurement costs.
13. O/H ADJ. this was a reduction in overhead cost for consideration if the company could cut it's direct labor bases from the level included in the rates used in LABOR & REL., above.
14. RFD stands for refurbishment of test aircraft for delivery after testing.

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21 May 6:30 am Public

18 May 1990

MDC SENSITIVE
C-17 PRELIMINARY ANALYSIS
FSD, FY88, FY89

	4-30-90 ACTUALS (000)	DEC PLAN		C17 PLAN		FISCAL		CONSENSUS		2.76% PLAN		% chg from DEC Plan C17 Plan	% chg from DEC Plan Fis
		ETC	EAC	ETC	EAC	ETC	EAC	ETC	EAC	ETC	EAC		
HOURS: (000)													
PRODUCTION	4,888	6,663	11,551	12,374	17,262	14,450	19,338	11,533	16,421	3,205	8,093		67
PROD. DEF.	26,502	8,787	35,289	8,803	35,305	15,270	41,772	13,531	40,033	3,853	30,355		15
LAB/FT	3,198	4,274	7,473	4,274	7,473	6,889	10,088	5,789	8,988	1,907	5,106		35
PCO	6,501	3,035	9,536	3,641	10,142	6,257	12,758	4,947	11,448	1,748	8,249		33
QA	1,260	1,201	2,461	2,009	3,269	2,902	4,162	2,436	3,696	464	1,724		69
ILS	2,086	2,375	4,461	2,317	4,403	2,356	4,442	2,356	4,442	1,112	3,198		1
OTHER	181	–	181	–	181	144	325	144	325	–	181		79
TOTAL HOURS	44,617	26,335	70,952	33,418	78,035	48,268	92,885	40,736	85,353	12,289	56,906		30
DOLLARS: (000,000)													
LABOR & REL. COSTS	$2,549	$1,446	$3,995	$1,993	$4,542	$2,941	$5,490	$2,498	$5,047	$ 762	$3,311		37
PROCUREMENT	1,050	1,423	2,473	2,250	3,300	2,250	3,300	2,250	3,300	2,250	3,300		33
TOTAL COST	$3,599	$2,869	$6,468	$4,243	$7,842	$5,191	$8,790	$4,748	$8,347	$3,012	$6,611		35
O/H ADJ	–	–	–	-150	-150	-150	-150	-150	-150	-150	-150		
TOTAL	$3,599	$2,869	$6,468	$4,093	$7,692	$5,041	$8,640	$4,598	$8,197	$2,862	$6,461		

54 RFD
8251

407

These data were reviewed with Capellupo shortly after completion and other senior management. I sat in on some of the reviews including Capellupo and the new Corporate Vice-President of Finance, H.J. Lanese. I was not present at any discussions as to how the company was going to deal with the impact of these much higher costs in their financial reports or what they intended to do about the $ 1.15 Billion in debt offering that was planned for registration sometime in 1990. It is my understanding that all the company did for the 2nd Quarter 1990 financial statements was stop accruing profit on the C-17.

At my level, the orders were to cut back all C-17 costs, primarily labor, in order to budget the remaining work to stay within the $ 6.461 Billion estimate at completion (See the Recap ... 2.76% ETC.). Everyone now knows the impact that had on McDonnell Douglas employment. I spent the next 6 weeks with the Program Office working on the force reductions.

Any experienced and knowledgeable aerospace industrial engineer would have seen the impossiblity of these actions as the learning curve unit airplane assembly estimates required about a 55 % slope (See Log-Log titled C-17A Assembly Manhours dated 5-31-90 and adjoining tabulation). Douglas had never run a 55 % learning curve on any program in all it's history. In addition, see the chart entitled C-17 Assembly Manhours Status dated 5-27-90, to see how badly overrun the C-17 airplanes in assembly were as measured against the new $ 6.461 Billion "Re-Baseline Budget".

C-17
ASSEMBLY MANHOURS STATUS - 27 MAY 1990

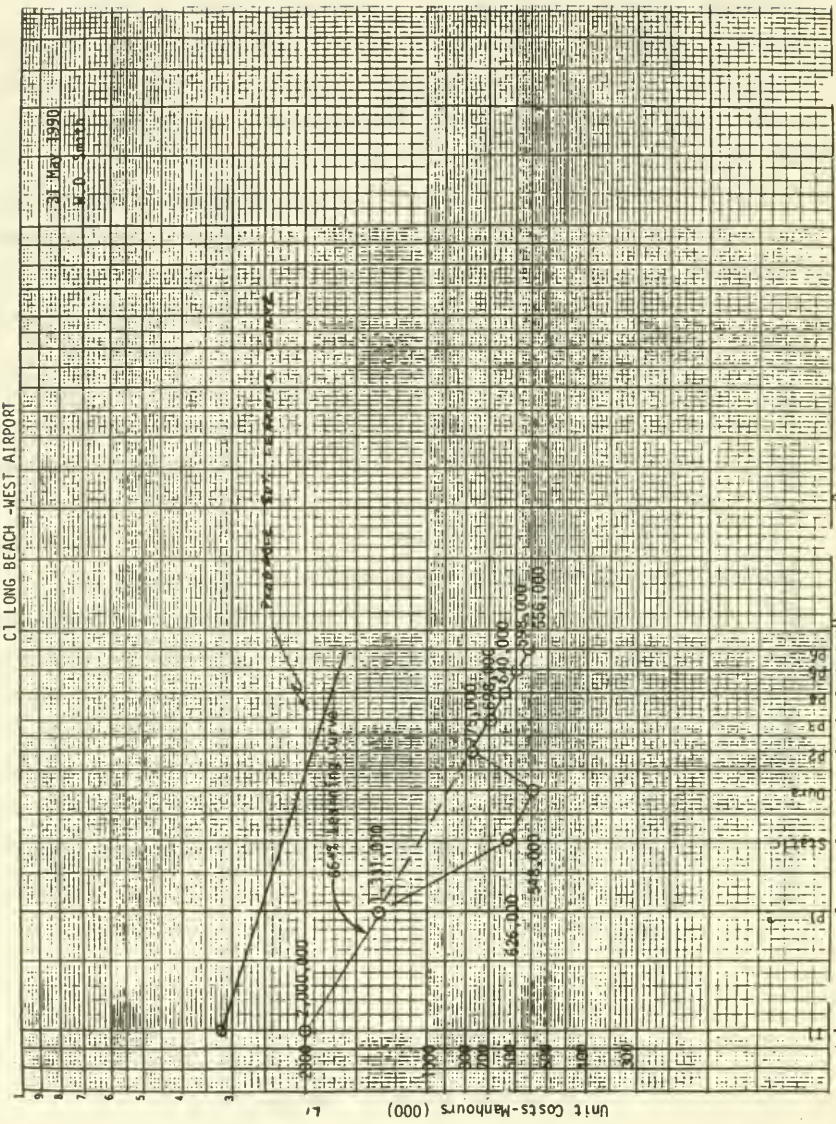
	Unit	Budgeted Hours-Note (2)	Actual Hours	Percent (%) Spent	Percent Complete	Projected Hours Est. At Complete
1	T-1	2,000,000	1,221,640	61.1%	40.2%	3,038,906
2	P-1	1,331,000	617,180	46.4%	26.5%	2,328,981
3	STATIC	626,000	230,019	36.7%	15.8%	1,455,817
4	DURA	548,000	85,852	15.7%	6.5%	N/A
5	P-2	775,000	17,322	2.2%	1.4%	N/A

NOTES

(1) Assembly hours - Analog 12 Level

(2) Budget to Production Assembly based on May, 1990, Hayden re-baseline budget

W.D. Smith, ext. 7-5963
05 June 90


C-17A ASSEMBLY MANHOURS
C1 LONG BEACH -WEST AIRPORT
31 May 1990
Unit Costs-Manhours (000)

C-17

Assembly EAC - May 1990

Unit	Aircraft	Actual April	ETC(000)----> 66+% Learning Curve									ETC Total	Total Hrs EAC (000)
			T1	P1	Stat	Dura	P2	P3	P4	P5	P6		
1	T1	1085	915									915	2000
2	P1 FY88	527		804								804	1331
3	Static	180			446							446	626
4	Dura	62				486						486	548
5	P2 FY88	4					771					771	775
6	P3 FY89	0						698				698	698
7	P4 FY89	0							640			640	640
8	P5 FY89	0								598		598	598
9	P6 FY89	0									556	556	556
SUB-TOTAL		1858	915	804	446	486	771	698	640	598	556	5914	7772
	RFD	0										513	513
PRODUCTION SPT		694										358	1052
Total		2552										6785	9337

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The situation at Douglas in June, 1990 was desperate. All programs were significantly behind schedule, had enormous part shortages to the assembly lines, were 6 to 9 months behind in receipt of procured parts on the C-17 and MD-11 programs, had serious quality problems on the C-17 and design engineering on both the C-17 and MD-11 were at least 9 months late to the manufacturing and procurement schedules.

Douglas hired personnel as required by program schedules without giving consideration to the extreme lateness being incurred on all program schedules. Money was spent on these personnel without real work for them.

One of the worst factors was the cultural revolution that TQMS caused with its emphasis on a new management process and observance of it's tenets of teamwork, consensus building, quality of worklife, career pathing, alternative work hours and everything that seemed to have nothing to do with building airplanes. The management lost it's business focus, awareness and played along with the Chairmans' social engineering nonsense

A good example of this were the instructions given to Mr. Bibee while he was the VP of Finance. In essence, he was to keep his nose out out of financial conditions of the various programs and to take their financial data as presented and process it into the company statements without question. No wonder no one knew what was going on. Prior to TQMS program office data was independently reviewed and approved for financial use and control because of possible vested interest or biased reporting.

McDonnell Douglas knew or should have known of the inadequacies of their C-17 estimates used for the second quarter of 1990 financial statements. Their cost saving initiatives notwithstanding, no well run aerospace company could have attained the production learning curves then assumed, let alone McDonnell. It may be a question of fiduciary breach.

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